Hemsley, Biologia Centrali-Americana

1.	pt. 1	1-96,	pls. i-vii	Sept. 1879
	2	97-184	viii-xiii	Nov. 1879
	3	185-280	xiv, xv	Feb. 1880
	4	281-376	xvi, xvii	Apr. 1880
	5	377-472	xviii-xxx	June 1880
	6	473-568	xxxi-xxxv	Aug. 1880
2.	pt. 7	1-96	xxxvi-xliii	Apr. 1881
	8	97-192	xliv-xlix	June 1881
	9	(vol. 1: 569-619		(Oct. 1881
		(vol. 2: 193-232	l	(Oct. 1881
	10	233-328	li-lvi	Dec. 1881
	11	329-424	lvii-lxi	Feb. 1882
	12	425-520	lxii-lxviii	Apr. 1882
	13	521-621	lxix	June 1882
3.	pt. 14	1-96	lxx-lxxvi	Oct. 1882
	15	97-184	lxxvii-lxxx	Jan. 1883
	16	185-280	lxxxi-lxxxiv	Nov. 1883
	17	281-376	lxxxv-xciv	Feb. 1884
	18	377-472	xcv-c	Feb. 1885
	19	473-568		Nov. 1885
	20	569-664	ci-cviii	Dec. 1885
	21	(3: 665-711	cix	(Feb. 1886
		(4: 1-48		(Feb. 1886
4.	pt. 22	49-144		Mar. 1887
	23	145-298		Aug. 1887
	24	299-410	cx	Dec. 1887
	25	411-498		Oct. 1888

List of plates - Preface - Introduction, etc.

QK
215
H45X
v.1
Bot.
J.D.S.

BIOLOGIA

CENTRALI-AMERICANA;

OR,

CONTRIBUTIONS TO THE KNOWLEDGE

OF THE

FAUNA AND FLORA

OF

MEXICO AND CENTRAL AMERICA.

EDITED BY

F. DUCANE GODMAN AND OSBERT SALVIN.

BOTANY.

VOL. I.

BY

W. William BOTTING HEMSLEY, A.L.S.,

HON. MEM. NAT. HIST. SOC. MEX.; ASSISTANT FOR INDIA AT THE HERBARIUM OF THE ROYAL GARDENS, KEW;
AUTHOR OF THE "BOTANY OF THE 'CHALLENGER' EXPEDITION," &c.

AND

A COMMENTARY ON THE INTRODUCTION AND APPENDIX.

BY

SIR J. D. HOOKER, LATE DIRECTOR OF THE ROYAL GARDENS, KEW.

Smithsonian Institution
C
242400
National Museum.

LONDON:

PUBLISHED FOR THE EDITORS BY

R. H. PORTER, 10 CHANDOS STREET, CAVENDISH SQUARE, W.,

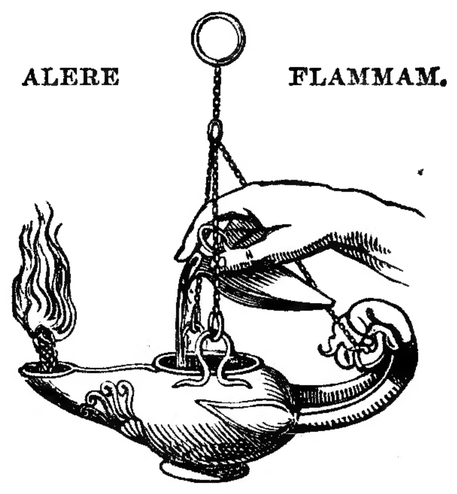
AND

DULAU & CO., SOHO SQUARE, W.

1879–1888.

SMITHSONIAN
MAY 13 1977
LIBRARIES

ALERE FLAMMAM.



PRINTED BY TAYLOR AND FRANCIS,
RED LION COURT, FLEET STREET.

LIBRARY

PREFACE.

When this work was commenced, a little more than twelve years ago, the main object in view was the collection of the widely scattered data bearing upon the phyto-geography of the region, in order to ascertain to what extent the phenomena agreed with, or deviated from, those obtaining in the Animal Kingdom, and also to supply as complete a synopsis of the flora as possible, so that its general character, relationships, and connections might be critically elaborated. Nevertheless, it was hoped that it would at the same time prove a substantial and useful contribution to Systematic Botany; and as the work proceeded greater attention was bestowed upon this branch of the subject, so that ultimately it grew far beyond the dimensions originally laid down. As this great task was undertaken by one person, it was necessary to keep it within limits as narrow as were consistent with the aim in view, to ensure a reasonable prospect of its being completed. A critical determination of the vast amount of material in the Kew Herbarium alone was out of the question, to say nothing of the supplemental collections in other establishments; yet it was difficult to decide where to draw the line. At first it was thought practicable to include the named materials at Kew, the British Museum, and Paris—the first forming a wide and trustworthy basis for genera, and largely also for species, resulting from the labours of Bentham and Hooker, in connection with their now happily completed invaluable 'Genera Plantarum'; but this plan had to be abandoned in consequence of the risk of confusion arising from diverse determinations in the various herbaria; and it was decided not to attempt doing more than could be accomplished at Kew. This course has been adversely criticised, but having intentionally and purposely thus curtailed the scope of the work, such criticisms call for no further reply. Considering that, for obvious

reasons, anything very closely approaching completeness could not have been attained had there been half a dozen workers in the field, instead of only one, the omission of some small historical collections is of the very slightest importance. Notwithstanding the fact that the work has been substantially restricted to the Kew Herbarium and Library, it has been, as already mentioned, considerably extended in a direction not originally contemplated. For the purposes in view it was thought that we might very largely rely on the names as we found them in the Kew Herbarium, and describe only such very evident novelties as did not involve too great an expenditure of time. In this manner the whole of the Polypetalæ was written out, and in the hands of the Editors, when an offer was received from Drs. Parry and Palmer to present the first set of a large collection of dried plants, chiefly from the State of San Luis Potosi, on the condition that we named the whole of them and embodied them in the "Biologia." To do this properly involved an enormous additional expenditure of time and money; yet the offer was accepted, and the writer, aided by his colleagues at Kew, spent nearly seven months on this collection, and the investigations it entailed, thereby greatly enhancing the value of the Enumeration, without considerably increasing its bulk.

This critical examination of a large portion of the Mexican plants led to much fuller synonymy and references to the existing literature in the second and succeeding volumes than is given in the first, and we are fully justified in saying that the quality of the work has improved in consequence.

Although an immense amount of time has been spent in looking up published species not represented in the Kew Herbarium by authenticated specimens, some, doubtless, have been overlooked; but a few omissions are of little consequence. Had every name referring to a Mexican plant been taken up, the result would have been literary completeness, it is true, yet nothing more. Moreover, it would be mere affectation to apologize for shortcomings of this kind in a work professedly little more than a skeleton from the standpoint of a systematist. As explained in the Appendix, upwards of a thousand nominal species are left out of consideration in the geographical tables, because it is believed that their retention would swell the proportion of the endemic element beyond what it really is.

The writer now has the great pleasure of recording his obligations and thanks to Mr. W. H. Fitch, the artist, and to his colleagues at Kew, especially to Professor D. Oliver, whose unrivalled knowledge of flowering plants is always at the service of others. Mr. J. G. Baker is almost wholly responsible for the nomenclature and limitation of the species of vascular cryptogams; but this matter is more fully explained in the remarks under the various orders.

The writer also feels that he would very much like to be permitted to mention that he has experienced the most liberal treatment from the Editors, who have expended a much larger sum of money (to say nothing of time) on the work than they can possibly see returned. Under other circumstances much more might be written on this point.

The coloured Plates were taken from sketches made from the fresh plants by Mrs. Salvin in Central America in 1873–74.

WILLIAM BOTTING HEMSLEY.

Chiswick, October 1888.

CONTENTS OF VOLUME I.

Page

PREFACE iii

INTRODUCTION ix

Commentary on the Introduction and Appendix lxii

Enumeration of the POLYPETALÆ, with Descriptions of New Species 1–576

INTRODUCTION.

As stated in the Preface, this work was undertaken mainly in the interests of Geographical Botany; and the distribution of the plants enumerated therein has been tabulated and discussed in considerable detail in the "Appendix" contained in the fourth volume.

The completion, or approaching completion, of several important works on systematic botany, dealing with the vegetation of large areas, such as Boissier's 'Flora Orientalis,' Hooker's 'Flora of British India,' Gray's 'Synoptical Flora of North America,' and monographs of large Natural Orders, together with recent botanical explorations in China, Madagascar, the mountains of Tropical Africa, and elsewhere, affords materials for a wider survey of the distribution of plants than has hitherto been attempted, and a closer comparison of the primary botanical and zoological regions of the world. To do this exhaustively would, of course, occupy much time and fill a large book; therefore only an exposition and rapid review of the principal facts will be attempted here *, and the inquiry will be limited to flowering plants.

Before approaching the examination of the botanical regions themselves it seems desirable to produce some further statistics and then endeavour to estimate their relative value †.

Throughout this work the classification and generic limits of Bentham and Hooker's 'Genera Plantarum' have been followed, and all comparisons are made on the same, or practically the same, basis. Since the appearance of the first part of the 'Genera Plantarum' in 1862, very numerous new plants have been discovered, including some extremely singular and anomalous ones, though none probably to which the authors would have assigned the rank of a new natural order. The number of distinct genera and species has, however, been largely augmented. Elsewhere ‡ some particulars have been given of the subsequent additions to the Compositæ, but it is unnecessary to enter into similar details respecting all the natural orders. Nevertheless, for purposes of comparison, it will be convenient to give here some of the statistics and rough approximations arrived at in the 'Genera Plantarum' §.

* The questions discussed in the following pages might more appropriately have been incorporated in the "Appendix;" but this is a further development of the subject suggested by Sir Joseph Hooker after perusing the analysis of the Flora of Mexico.

† Following the most approved nomenclature, the primary geographical divisions of the vegetation of the world are designated "regions" and the secondary divisions "subregions."

‡ Vol. IV. p. 249.

§ From a summary by N. E. Brown in the 'Gardener's Chronicle,' n. s. xix. p. 733.

Statistics of the Phanerogamic Flora of the World.

	Orders.	Genera.	Species.
Dicotyledones	165	6052	77311
Gymnospermeæ	3	44	415
Monocotyledones	34	1489	17894
Totals	202*	7585	95620†

At Kew it is the practice to post up all proposed new genera as they are published, and from a cursory examination of their claims to this rank (in Bentham and Hooker's sense) the number of distinct genera now known is about 8000; and, allowing a proportionate increment of new species, the total may be placed at 100,000. Judging from the exceedingly large number of new forms in the latest collections from the Malayan Peninsula, Borneo, New Guinea, and Central China, future explorations will doubtless considerably increase these totals. Absolutely nothing is known botanically of immense tracts of the interior of Africa; whilst such comparatively well-explored countries as Mexico and Central America still continue to yield as much as ten per cent. of new species in collections made out of the beaten tracks, and in a North-Mexican collection of about 270 species made by C. G. Pringle in 1887, 20 per cent. are indicated as new in a catalogue by A. Gray and S. Watson.

The general distribution of the natural orders is given in our fourth volume, pages 201 to 207. Below are enumerated those natural orders of plants estimated by Bentham and Hooker to contain 1000 species and upwards:—

	Genera.	Species.
Compositæ	782	9800
Leguminosæ	403	6500
Orchideæ‡	334	5000
Rubiaceæ	341	4100
Gramineæ	298	3200
Euphorbiaceæ	197	3000
Labiatæ	136	2600
Cyperaceæ	61	2200
Liliaceæ	187	2100
Scrophularineæ	158	1900
Myrtaceæ	78	1800
Melastomaceæ	134	1800
Urticaceæ	108	1500
Acanthaceæ	120	1350
Asclepiadaceæ	147	1300
Umbelliferæ	153	1300
Solanaceæ	67	1250
Cruciferæ	173	1200
Borragineæ	68	1200
Palmæ	132	1100
Campanulaceæ	54	1000
Ericaceæ	52	1000
Cactaceæ	14	1000
Rosaceæ	71	1000
Piperaceæ §	8	1000
Totals . . 25 .	4276	59200

* In this work the Fumariaceæ are counted as a distinct natural order, which brings the total to 203.

† In some instances Bentham and Hooker indicate the number of species of an order as ranging between two sums, the lower of which was taken by Mr. Brown. From an independent calculation, based partly on the higher, and partly on the mean of the two sums given, a total of 96680 species is obtained.

‡ 4500 to 5000 in the 'Genera Plantarum.'

§ Probably overestimated.

From the foregoing it will be seen that twenty-five, or one eighth, of the natural orders include much more than half the genera, as well as of the species; and all of them are very widely dispersed; sixteen of them extending to the arctic regions.

Twenty natural orders have only from one to three genera and less than ten species, namely:—

	Genera.	Species.
Salvadoraceæ	3	9
Sarracenieæ	3	8
Cyrilleæ	3	8
Roxburghiaceæ	3	8
Flagellarieæ	3	8
Datiscaceæ	3	4
Lennoaceæ	3	4
Empetraceæ	3	4
Philydraceæ	3	4
Calycanthaceæ	2	4
Canellaceæ	2	4
Balanopseæ	1	8
Mayaceæ	1	7
Platanaceæ	1	6
Coriarieæ	1	3
Moringeæ	1	3
Columelliaceæ	1	2
Leitnerieæ	1	2
Ceratophylleæ	1	2
Batideæ	1	1
Totals	40	99

Some of the foregoing orders are quite local, while others have a wider range, particulars of which are given in the fourth volume, pp. 171–205. There are six other orders of only one genus each, namely, the American Lacistemaceæ, comprising sixteen described species, and the Australasian Stackhousiaceæ* of about twenty species; the widely spread Frankeniaceæ and Myricaceæ, and the Old-World Nepenthaceæ and Casuarineæ: all rather numerous in species.

As another illustration of the Flora of the World, a list of genera numbering 300 species and upwards each is appended, together with their general distribution †.

Genera.	Species.	Distribution.
Senecio	900	Nearly all over the world.
Solanum	700	Generally dispersed in warm regions, rarer in temperate.
Piper	600	Tropics, and extending to Japan and New Zealand.
Euphorbia	600	Almost everywhere, except the coldest regions.
Ficus	600	Universal in the tropics, rare in temperate regions.
Astragalus	500	North temperate and cold regions; rare in the south, and wanting in South Africa and in Australasia.
Eugenia	500	Tropical and subtropical regions.
Psychotria	500	All over the tropics.
Croton	500	Tropics and extratropical America.
Carex	500	In nearly all temperate and cold regions.
Phyllanthus	450	Very widely dispersed in warm regions, rare in temperate.
Salvia	450	North temperate and subtropical regions, rare in the south, except the Andes and South Africa.

* The somewhat anomalous monotypic Australian genus *Macgregoria*, Muell., is referred to this order, a fact overlooked in the general table, vol. iv. p. 177.

† See Bentham in 'Gardener's Chronicle,' n. s. xix. p. 371.

Genera.	Species.	Distribution.
Acacia	432	Generally in warm regions; numerous in Australia.
Eupatorium	400	Temperate and subtropical regions except Africa and Australia, but most numerous in South America.
Erica	400	Europe, Mediterranean region, and very numerous in South Africa.
Peperomia	400	All over the tropics with few extensions into temperate regions.
Epidendrum . . .	400	Tropical and subtropical America; the Galapagos Islands.
Cyperus	400	All warm regions; rarer in temperate.
Vernonia.	380	Tropics generally; rare in temperate regions.
Cassia.	338	All tropical countries; rare in temperate regions.
Loranthus	330	Warm regions; rarer in temperate.
Centaurea	320	Europe, Africa, and Asia; six in America; one in Australia.
Myrcia	300	Tropical and subtropical America.
Miconia	300	Tropical and Andine America.
Mamillaria	300	Mexico to Bolivia.
Mesembryanthemum .	300	Mediterranean region to Cape and Australasia; chiefly Cape.
Ipomœa	300	All warm and most temperate countries.
Quercus	300	North temperate and subtropical regions and extending to New Guinea.
Totals . . 28 .	12400	

These twenty-eight genera contribute 13 per cent. of Bentham and Hooker's estimate of the total number of species of flowering plants. With regard to the actual numbers given, some of them, at least, are considerably below what the authors would themselves probably distinguish as species. Thus, for instance, Bunge, in a monograph of the Old-World species of *Astragalus*, published since the corresponding part of the 'Genera Plantarum,' describes 971 species, and he has subsequently increased the number to upwards of 1000; and there are at least 200 American species. The estimated number of species of *Piper* and *Peperomia* is perhaps in excess of that actually existing.

There is one more feature in the world distribution of flowering plants demanding attention, and that is the wide or peculiar range of certain species, which possess no special means of dispersion by animals or birds or the elements, and which are most unlikely to have been aided, intentionally or unintentionally, by man. Such species are not few in number, but a sample of them will be sufficient as an illustration of distribution, and a selection may be made from those inhabiting Britain. Sir Joseph Hooker has discussed this phenomenon with greater fulness than we have space to do in this place *.

Radiola millegrana	Europe, North Africa, and mountains of Tropical Africa.
Alchemilla vulgaris	Western Europe to N.E. India, Labrador, Greenland, and Alps of Victoria, Australia.

* 'Flora Tasmaniæ,' i. Introductory Essay, p. xciv; and also "On the Plants of the Cameroons Mountains," in the Journal of the Linnean Society, Bot. vii. p. 178.

Cotyledon umbilicus	Europe, N. Asia, and mountains of Tropical Africa.
Lythrum salicaria	Europe, N. Asia, N. America, and Australia.
Calystegia sepium	Europe, Asia, N. Africa, N. and S. America, and Australasia.
Sibthorpia europæa	Western Europe, mountains of Tropical Africa.
Brunella vulgaris	Europe, Asia, N. and S. America, Australasia.
Lycopus europæus	Europe, N. Africa, N. Asia, and N. America.
Deschampsia cæspitosa	North and South temperate and Arctic regions and mountains of Tropical Africa.
Luzula campestris	Temperate and cold regions throughout the World.

It is not intended to discuss the various means by which the above-named plants may have been thus dispersed—whether by migrations or natural agencies, inasmuch as this has already been done as exhaustively, perhaps, as the data permit.

The following table, extracted from an abstract of a paper by Mr. T. Comber on the world distribution of British flowering plants *, is a further illustration of the relatively wide distribution of what Sir Joseph Hooker has designated the Scandinavian Flora. It is a summary of the distribution of the vascular plants regarded as indigenous to Britain, divided into four climatal classes, according to the latitude or altitude they inhabit. The first column contains the names of these classes, which are sufficiently descriptive to be intelligible; the sixth column the total number of each class, and the intermediate columns the number of species extending to the countries or areas named.

General Distribution of British Plants. (After Comber.)

	Europe.	Europe and Asia.	Europe and America.	Universal.	Total.	Per cent.
Southern	149	123	6	16	294	26
Temperate	61	299	12	264	636	57
Northern	12	13	5	94	124	11
Arctic	5	3	8	53	69	6
Total	227	438	31	427	1123	100
Per cent.	20	39	3	38	100	

It will be observed from the totals in the sixth column that none of the species

* 'Journal of Botany,' 1874, p. 88. The original appeared in the 'Transactions of the Historic Society of Lancashire and Cheshire.'

appear in two categories; and it should be explained that a considerable number of the plants indicated in the second column as having only European extensions actually reach North Africa. The term "universal" is applied to those plants which spread into all three of the northern continents; and it also includes the cosmopolitan species. With regard to the "southern universal" the majority extend into the tropics; and of the "temperate universal" sixteen species recur (in the southern hemisphere) in America only, ten in Africa only, and thirteen in Australia and New Zealand only; while fifty-six are more widely spread in south temperate regions. Though the foregoing numbers can only be accepted as approximate, they convey a good idea of the wide distribution of the British Phanerogamic Flora, which does not contain a single well-marked endemic species.

Statistical comparison of the Floras of large and widely separated areas.

In the 'Appendix' (vol. iv. pp. 202–207) comparisons are made between the Floras of Mexico and Australia, and the relative positions of the natural orders shown, according to their predominance in species. No very special meaning or importance is attached to such comparisons; yet they are exceedingly interesting, and teach something beyond mere numbers of species, especially to persons possessing a practical knowledge of the nature, size, duration, &c. of the plants constituting the various natural orders. It is thought, therefore, that an extension of such comparisons to a third area, that of British India, may be welcome. There are many similarities as well as diversities in the American and Asiatic areas: similarities in the altitudinal and latitudinal ranges of the two countries, and in a less degree in their climatal conditions; diversities in the direction of the principal mountain-chains, and consequently of the aspects of the slopes or exposures, and diversities in the land-connections, drainage, and coast-line. It would unduly lengthen this sketch to enter into further particulars on these points, therefore a tabular view of the composition of the Indian Flora compared with those of Australia and Mexico* may follow here. This table was drawn up, with the assistance of Sir Joseph Hooker, from his 'Flora of British India' as far as published, and from the Kew Herbarium and recent monographs, such as Engler's 'Araceæ' and Baker's various papers on petaloid monocotyledons. The writer, however, is entirely responsible for the numbers of species of the genera of Orchideæ, Scitamineæ, Gramineæ, and some smaller orders, whilst Mr. C. B. Clarke obligingly furnished the numbers of the Cyperaceæ†. At Mr. Salvin's suggestion a column showing the position of the natural orders in the Flora of the World has since been added.

* For shortness Mexico is employed here and elsewhere instead of Mexico and Central America.

† Owing to some mistakes in the figures, chiefly in the number of species of *Quercus*, discovered after the table was compiled, the percentages were calculated from a total of 13,647 instead of 13,700. The orders affected have been transferred to their proper positions, but it was not thought desirable to make any other alterations.

Sequence of the Natural Orders of the Phanerogamic Flora of British India according to their predominance in Species, with their relative percentages, and their positions in the Floras of the World, of Australia, and of Mexico.

Orders.				Species.			Genera.	
Position in the Flora of the World*.	Position in the Australian Flora.	Position in the Mexican Flora.	Position in the Indian Flora.	Total number.	Percentage in Phanero-gamia.	Number endemic.	Total number.	Number endemic.
3	7	3	1. Orchideæ	1060	7·77	969	106	20
2	1	2	2. Leguminosæ	831	6·09	482	132	13
5	6	5	3. Gramineæ	800	5·86	476	134	11
6	9	8	4. Euphorbiaceæ	624	4·57	473	79	12
4	14	7	5. Rubiaceæ	611	4·48	446	89	21
1	4	1	6. Compositæ	598	4·38	381	122	11
13	51	16	7. Acanthaceæ	503	3·69	433	49	11
8	5	11	8. Cyperaceæ	385	2·82	171	24	
7	15	9	9. Labiatæ	331	2·43	226	55	8
12	33	20	10. Urticaceæ	305	2·23	196	45	6
14	35	17	11. Asclepiadeæ	249	1·82	200	53	15
18	73	26	12. Rosaceæ	218	1·60	144	26	2
10	30	14	13. Scrophularineæ	215	1·58	99	55	7
20	44	65	14. Laurineæ	205	1·50	159	16	1
32	87	76	15. Scitamineæ	204	1·49	162	20	5
34	73	76	16. Anonaceæ	192	1·41	165	25	7
9	13	25	17. Liliaceæ	178	1·30	93	36	3
11	103	21	18. Melastomaceæ	166	1·22	120	21	2
22	97	53	19. Geraniaceæ	165	1·21	137	9	
11	2	46	20. Myrtaceæ	157	1·15	117	11	1
14	19	34	21. Umbelliferæ	154	1·13	114	37	3
21	32	19	22. Convolvulaceæ	152	1·11	75	15	1
20	89	24	23. Aroideæ	142	1·04	107	32	11
16	38	22	24. Borragineæ	140	1·03	82	32	3
16	37	37	25. Cruciferæ	137	1·00	55	43	4
28	62	42	26. Gentianeæ	132	0·97	105	15	2
20	40	36	27. Apocynaceæ	131	0·96	94	39	3
23	121	18	28. Gesneraceæ	129	0·95	107	25	10
23	29	33	29. Verbenaceæ	128	0·94	78	23	
17	55	23	30. Palmæ	126	0·92	94	30	1
25	73	53	31. Ranunculaceæ	115	0·84	73	19	1
32	89	61	32. Anacardiaceæ	112	0·82	86	22	8
38	36	57	33. Tiliaceæ	110	0·81	56	13	3
34	79	59	34. Celastrineæ	105	0·77	85	13	2
19	60	52	35. Caryophyllaceæ	104	0·76	57	19	1
34	112	31	36. Cupuliferæ	99	0·72	95	6	
45	71	85	37. Ampelideæ	94	0·69	71	3	
25	57	44	38. Polygonaceæ	93	0·68	38	7	
61	..	..	39. Dipterocarpeæ	92	0·67	80	9	2
23	18	13	40. Malvaceæ	91	0·67	40	22	6
28	15	55	41. Sterculiaceæ }	88	0·64	60	17	2
29	86	56	42. Myrsineæ }	88	0·64	61	11	3

* Orders represented by the same number of species in the Flora of the World, in the Australian Flora, or in the Mexican Flora are indicated numerically as occupying the same position in the sequence, otherwise some of them would be removed a considerable distance from their true positions; and in comparisons the same course should be taken with the Indian orders of equal representation, here bracketed.

Phanerogamic Flora of British India, &c. (*continued*).

Orders.				Species.			Genera.	
Position in the Flora of the World.	Position in the Australian Flora.	Position in the Mexican Flora.	Position in the Indian Flora.	Total number.	Percentage in Phanero-gamia.	Number endemic.	Total number.	Number endemic.
43	44	81	43. Meliaceæ }	84	0·62	71	19	3
42	66	96	44. Oleaceæ }	84	0·62	67	10	1
45	97	134	45. Primulaceæ	81	0·59	57	9	1
27	46	90	46. Saxifragaceæ	80	0·59	56	14	
24	12	80	47. Rutaceæ }	77	0·56	52	23	3
41	68	49	48. Commelinaceæ }	77	0·56	44	7	1
29	55	40	49. Loranthaceæ	74	0·54	58	5	
31	63	29	50. Cucurbitaceæ	71	0·52	33	29	7
23	20	29	51. Sapindaceæ }	70	0·51	41	23	3
48	125	101	52. Styraceæ }	70	0·51	60	2	
45	82	121	53. Ebenaceæ	68	0·50	53	2	
53	81	121	54. Olacineæ	66	0·48	51	23	3
36	*	38	55. Begoniaceæ	64	0·47	61	1	
18	46	41	56. Campanulaceæ	64	0·47	49	13	3
18	108	46	57. Ericaceæ	62	0·45	52	9	1
47	125	81	58. Guttiferæ	61	0·45	51	6	3
18	89	12	59. Piperaceæ	56	0·41	40	3	
37	65	73	60. Araliaceæ	55	0·40	42	18	3
41	60	59	61. Capparideæ }	53	0·39	33	8	
44	135	65	62. Ternstrœmiaceæ }	53	0·39	36	14	1
38	68	96	63. Sapotaceæ	52	0·38	44	8	
33	25	58	64. Rhamnaceæ	51	0·37	30	12	1
36	39	65	65. Loganiaceæ	50	0·37	33	8	
51	125	69	66. Caprifoliaceæ }	49	0·36	36	8	2
40	135†	73	67. Vacciniaceæ }	49	0·36	44	4	2
28	17	78	68. Chenopodiaceæ }	49	0·36	5	20	1
30	21	39	69. Amarantaceæ	48	0·35	19	17	2
45	73	35	70. Lythraceæ	45	0·33	22	11	
46	54	88	71. Combretaceæ }	44	0·32	26	8	1
15	27	10	72. Solanaceæ }	44	0·32	14	10	
34	103	42	73. Crassulaceæ	40	0·30	26	8	1
56	125	71	74. Burseraceæ	39	0·29	35	10	3
57	125	112	75. Connaraceæ	35	0·26	25	7	1
52	22	94	76. Dilleniaceæ }	34	....	26	6	2
63	78	115	77. Menispermaceæ }	34	....	18	19	4
34	49	44	78. Polygalaceæ }	34	....	16	5	
63	..	153	79. Fumariaceæ	31	....	24	4	
65	135	143	80. Myristicaceæ }	30	....	20	1	
51	79	94	81. Juncaceæ }	30	....	18	2	
51	..	107	82. Salicineæ	29	....	25	2	
68	112	128	83. Magnoliaceæ }	27	....	23	8	
32	97	51	84. Bignoniaceæ }	27	....	16	11	1
50	135	88	85. Hypericineæ }	26	....	17	3	
55	112	91	86. Samydaceæ }	26	....	18	3	
39	71	128	87. Eriocauleæ }	26	....	20	1	
54	96	98	88. Bixineæ }	25	....	16	9	
41	52	65	89. Coniferæ }	25	....	15	13	

* Leaves of what may prove to be a *Begonia*, have been collected in North-western Australia.

† The somewhat anomalous *Wittsteina* is referred to the Ericaceæ by Mueller.

Phanerogamic Flora of British India, &c. (*continued*).

Orders.				Species.		Genera.	
Position in the Flora of the World.	Position in the Australian Flora.	Position in the Mexican Flora.	Position in the Indian Flora.	Total number.	Number endemic.	Total number.	Number endemic.
46	85	62	90. Violarieæ	24	13	3	
55	125	121	91. Ilicineæ	24	21	1	
55	135	115	92. Orobanchaceæ	24	16	5	
52	57	91	93. Lentibularieæ	23	14	2	
24	26	14	94. Amaryllideæ	23	15	5	
54	112	81	95. Dioscoreaceæ	23	16	2	1
58	112	86	96. Linaceæ	22	14	7	2
75	..	134	97. Sabiaceæ	21	14	2	1
71	97	150	98. Rhizophoreæ	21	8	10	2
41	108	28	99. Onagrarieæ	21	3	5	
60	135	105	100. Podostemaceæ	21	21	3	2
60	48	103	101. Naiadeæ	20	6	8	
67	135	107	102. Cornaceæ	19	13	7	1
35	31	140	103. Thymelæaceæ	18	8	11	
63	..	98	104. Berberideæ	17	14	6	3
41	..	82	105. Valerianeæ	17	12	4	
60	..	..	106. Dipsaceæ	17	15	4	1
61	97	78	107. Simarubeæ	16	8	9	
32	52	128	108. Ficoideæ	16	1	7	
51	108	73	109. Aristolochiaceæ	16	13	4	
48	42	153	110. Santalaceæ	16	12	8	1
60	33*	153	111. Hæmodoraceæ	16	14	4	
26	125	26	112. Malpighiaceæ	13	11	3	
69	135	115	113. Papaveraceæ	12	8	4	1
65	34	115	114. Haloragеæ	12	4	5	
57	135	128	115. Ochnaceæ	11	7	4	
72	94	153	116. Hydrocharideæ	11	3	10	1
70	125	153	117. Burmanniaceæ	11	9	2	
23	57	62	118. Irideæ	11	8	2	
45	103	48	119. Passifloreæ	10	8	3	
51	112	112	120. Plantagineæ	10	1	1	
49	108	49	121. Nyctagineæ	10	3	3	
19	3	134	122. Proteaceæ	10	8	1	
64	43	..	123. Pittosporeæ	9	7	1	
51	112	140	124. Plumbagineæ	9	3	6	
76	124	..	125. Nepenthaceæ	9	3	1	
69	103	103	126. Alismaceæ	9	1	6	1
74	112	115	127. Nymphæaceæ	8	1	5	1
72	..	143	128. Tamariscineæ	8	4	2	
63	66	105	129. Zygophyllaceæ	8	..	4	
77	135	143	130. Hamamelideæ	8	5	8	2
65	93	..	131. Pandanaceæ	8	5	2	
71	95	..	132. Xyrideæ	7	4	1	
82	103	112	133. Lemnaceæ	7	1	2	
59	49	98	134. Portulaceæ	6	3	2	
82	112	153	135. Elatineæ	6	1	2	
73	..	153	136. Chailletiaceæ	6	5	1	
83	135	..	137. Elæagnaceæ	6	2	2	
74	135	143	138. Balanophoreæ	6	5	2	
72	..	143	139. Gnetaceæ	6	1	2	

* Sometimes united with the Amaryllideæ, as in Bentham's 'Flora Australiensis.'

Phanerogamic Flora of British India, &c. (*continued*).

Orders.				Species.		Genera.	
Position in the Flora of the World.	Position in the Australian Flora.	Position in the Mexican Flora.	Position in the Indian Flora.	Total number.	Number endemic.	Total number.	Number endemic.
86	..	..	140. Salvadoraceæ	5	..	3	
57	..	..	141. Selagineæ	5	3	1	
85	135	..	142. Taccaceæ	5	2	1	
83	125	143	143. Typhaceæ	5	..	2	
77	..	143	144. Resedaceæ	4	..	3	
62	41	..	145. Droseraceæ	4	2	2	
72	121	128	146. Pedalineæ	4	2	2	
77	..	128	147. Juglandeæ	4	2	2	
74	..	150	148. Myricaceæ	4	2	1	
87	135	..	149. Flagellarieæ	4	2	2	
83	..	..	150. Triurideæ	4	4	1	
63	23	..	151. Stylideæ	3	2	1	
84	..	143	152. Monotropeæ	3	1	3	1
78	..	143	153. Chloranthaceæ	3	2	2	
55	82	107	154. Monimiaceæ	3	1	3	1
67	83	86	155. Cycadaceæ	3	2	1	
87	135	..	156. Roxburghiaceæ	3	2	2	1
92	..	..	157. Moringeæ	2	1	1	
91	..	153	158. Datiscaceæ	2	..	2	
51	10	153	159. Goodenovieæ	2	..	1	
64	*112	121	160. Illecebraceæ	2	..	2	
74	135	121	161. Pontederiaceæ	2	..	1	
84	97	153	162. Frankeniaceæ	1	..	1	
90	..	153	163. Coriarieæ	1	..	1	
18	..	6	164. Cactaceæ	1	..	1	
40	8	..	165. Epacrideæ	1	..	1	
87	..	..	166. Diapensiaceæ	1	1	1	
55	..	71	167. Polemoniaceæ	1	..	1	
55	125	70	168. Hydrophyllaceæ	1	..	1	
69	87	107	169. Phytolaccaceæ	1	..	1	
81	..	150	170. Cytinaceæ	1	1	1	1
89	..	134	171. Platanaceæ	1	..	1	
80	62	..	172. Casuarineæ	1	..	1	
93	135	153	173. Ceratophylleæ	1	..	1	
91	121	..	174. Philydraceæ	1	..	1	

Summary of the Indian element in the foregoing Table.

	Orders.	Genera. Total.	Genera. Endemic.	Species. Total.	Species. Endemic.
Polypetalæ	72	844	113	4489	2965
Gamopetalæ	41	714	108	4233	2982
Incompletæ	30	251	27	1693	1159
Dicotyledones	143	1809	248	10415	7106
Gymnospermeæ	3	16	....	34	18
Monocotyledones	28	446	56	3198	2246
Grand totals	174	2271	304	13647	9370

* Associated with the Caryophyllaceæ in Bentham's 'Flora Australiensis.'

Relative numbers of Orders, Genera, and Species in India, Mexico, North America, and Australia.

	Orders.	Genera.	Species.
India	174*	2271	13647
Mexico	162*	1794	11626
North America	158*	1513	9403
Australia	154	1335	8575

Percentages of Dicotyledones (including Gymnospermeæ) and Monocotyledones in the four areas and in Europe.

	Dicotyledones.	Monocotyledones.	
India	76·57	23·43	=100·00
Mexico	78·50	21·50	=100·00
North America †	80·62	19·38	=100·00
Australia	81·50	18·50	=100·00
Europe ‡.....	82·70	17·30	=100·00

The mean proportions of the five countries are 79·97 dicotyledons and 20·03 per cent. monocotyledons, against 81·29 and 18·71 for the whole world, showing that the numerical proportions do not greatly vary for large areas, no matter how distant they are, nor how dissimilar is their vegetation as a whole; yet it is hardly necessary to add that very different proportions exist in smaller areas. Generally speaking, the drier the region the smaller the proportion of monocotyledons, and the greater the proportion of them bulbous plants. Maximowicz § in an analysis of the vegetation of different parts of Central and Eastern Asia gives the percentage of monocotyledons in the Phanerogamia as 14·1 in Tangout, or Northern Tibet, and 26·1 in Japan. But, as already hinted, figures of this kind convey no very definite information, inasmuch as they embody no idea of individual development, as a species of palm, bamboo, or banana of the tropics counts no more than a snowdrop, daffodil, or small grass of the temperate regions. Alphonse De Candolle ‖, who presents very numerous statistics of the proportions of monocotyledons and dicotyledons in small areas, strongly insists on this point. It should be borne in mind that all statistical analyses of floras are to a great extent illusory, and can only be properly appreciated after a careful consideration of the composition of the elements. This fact is illustrated in the following somewhat detailed examination of the preceding table.

One thing brought into great prominence by this table is the large number of

* Including the Fumariaceæ, treated as a suborder of the Papaveraceæ in the 'Genera Plantarum.'

† Calculated from the second edition of Oyster's 'Catalogue of North American Plants,' after deducting the introduced species.

‡ Calculated from the numbers given in Nyman's 'Conspectus Floræ Europææ,' p. 848, excluding the "subspecies."

§ Bulletin du Congrès International de Botanique et d'Hortcultiure à St. Pétersbourg, 1884, p. 158.

‖ Géographie Botanique Raisonnée, ii. p. 1166.

natural orders represented in each of the areas under consideration, especially in India, where there are 86 per cent. of the orders retained by Bentham and Hooker. This is not put forward as something new, though it will be new to most people, but it comes out more strongly than might have been anticipated. It should be mentioned, too, that British India covers only a portion of one of the primary botanical regions, though, on the other hand, the upper belt of vegetation of the Himalayas belongs to the northern region. Let us pursue the ordinal distribution a little further, premising that the reader will remember that important particulars not given here may be found in the Appendix.

1. *Natural Orders not known to be represented in British India* *.

Calycanthaceæ.	Bruniaceæ.	Leitnerieæ.
Sarraceniaceæ.	Loasaceæ.	Lacistemaceæ.
Cistaceæ.	Turneraceæ †.	*Empetraceæ.*
Canellaceæ.	Calycereæ.	Bromeliaceæ.
Tremandreæ.	Lennoaceæ.	Mayaceæ.
Vochysiaceæ.	Columelliaceæ.	Rapateaceæ.
Chlænaceæ.	*Myoporineæ.*	Cyclanthaceæ.
Humiriaceæ.	Batideæ.	Centrolepideæ.
Cyrillaceæ.	Penæaceæ.	*Restiaceæ.*
Stackhousiaceæ.	Balanopseæ.	

2. *Natural Orders not known to be represented in any part of America* ‡.

Pittosporeæ.	Moringeæ §.	Balanopseæ.
Tremandreæ.	Dipsaceæ.	Casuarineæ §.
Dipterocarpeæ.	Salvadoraceæ.	Philydraceæ.
Chlænaceæ.	Nepenthaceæ.	Flagellarieæ.
Stackhousiaceæ.	Penæaceæ.	Pandanaceæ §.

3. *Natural Orders not known to be represented in Australia.*

Calycanthaceæ.	Canellaceæ.	Chailletiaceæ.
Berberidaceæ.	Vochysiaceæ.	Cyrillaceæ.
Sarraceniaceæ.	Tamariscineæ.	Sabiaceæ.
Fumariaceæ.	Dipterocarpeæ.	Coriarieæ.
Resedaceæ.	Chlænaceæ.	Moringeæ.
Cistaceæ.	Humiriaceæ.	Bruniaceæ.

* Those orders printed in italics are represented in some part of Asia. Forty-one natural orders are not known to be represented in Mexico: see the table in vol. iv. pp. 171–200. A *Drosera*, received at Kew from British Honduras, as this was going to press, reduces this number to forty.

† *Turnera ulmifolia* is extensively colonized in India.

‡ In the table referred to the Selagineæ are indicated as not American; but one or two Asiatic species of *Gymnandra* (*Lagotis*) recur in the extreme north-west of America.

§ These orders, and perhaps some others, are represented by colonized species.

Loasaceæ.
Turneraceæ.
Begoniaceæ.
Datiscaceæ.
Cactaceæ.
Valerianaceæ.
Dipsaceæ.
Calycereæ.
Monotropeæ.
Diapensiaceæ.
Lennoaceæ.
Salvadoraceæ.
Polemoniaceæ.
Columelliaceæ.
Selagineæ *.
Batideæ.
Cytineæ.
Chloranthaceæ.
Penæaceæ.
Platanaceæ.
Leitnerieæ.
Juglandaceæ.
Myricaceæ.
Salicineæ.
Lacistemaceæ.
Empetraceæ.
Gnetaceæ.
Bromeliaceæ.
Mayaceæ.
Rapateaceæ.
Cyclanthaceæ.
Triurideæ.

4. *Natural Orders represented in Mexico or Australia, but not known in the Indian Flora.*

In Mexico.	In Australia.
Cistaceæ.	Tremandreæ.
Vochysiaceæ.	Stackhousiaceæ.
Loasaceæ.	Myoporineæ.
Turneraceæ.	Balanopseæ.
Lennoaceæ.	Centrolepideæ.
Lacistemaceæ.	Restiaceæ.
Bromeliaceæ.	
Cyclanthaceæ.	

5. *Natural Orders not known to occur in India, Mexico, or Australia.*

Calycanthaceæ.
Sarraceniaceæ.
Canellaceæ.
Chlænaceæ.
Humiriaceæ.
Cyrillaceæ.
Bruniaceæ.
Calycereæ.
Columelliaceæ.
Batideæ.
Penæaceæ.
Leitnerieæ.
Empetraceæ.
Mayaceæ.
Rapateaceæ.

6. *Indian Natural Orders not known to occur either in Mexico or Australia.*

Dipterocarpeæ.
Dipsaceæ.
Salvadoraceæ.
Selagineæ.
Moringeæ.
Diapensiaceæ.
Triurideæ.

The phenomena of ordinal distribution as set forth in the six preceding tables demand a few words of explanation. Respecting the first table, it is remarkable how little it contains; how few important orders, considered either as to their extent or structural peculiarities, in relation to the land-area of the rest of the world. The

* Specimens of the South-African *Dischisma capitatum*, Choisy, were collected by Drummond in West Australia, but Bentham regarded the species as "most likely introduced," and Mueller treats it as an undoubted alien.

succeeding tables afford further information on the distribution of most of these orders. Those printed in italics are represented in Asia; some of them by solitary outliers; others, the Calycanthaceæ for example, as fully as elsewhere, and these may yet be found in the mountains of Northern India.

Not less remarkable is the small number of orders in the second table, especially in relation to the vegetation as a whole, of the two hemispheres *. With regard to the third, future explorations may probably reduce the total by about half a dozen orders, though not more. The fourth and fifth tables deal in different ways with orders included in the first; the fifth bringing also into great prominence the fact that there is exceedingly little ordinal peculiarity in the rest of the world, including the vast African region. The sixth table contains only one important natural order, namely the Dipterocarpeæ, which are known to extend to New Guinea, and some may possibly exist in tropical Australia. Altogether, twenty-six of the Indian orders are not found in Australia, and nineteen of them are not found in Mexico.

Natural Orders not known to extend beyond America.

Sarraceniaceæ.	Batideæ.
Canellaceæ.	Leitnerieæ.
Vochysiaceæ.	Lacistemaceæ.
Cyrillaceæ.	Bromeliaceæ.
Calyceraceæ.	Mayaceæ.
Lennoaceæ.	Rapateaceæ.
Columelliaceæ.	Cyclanthaceæ.

The Galapagos islands are regarded as belonging to the American region. Besides the foregoing orders, which appear to be absolutely confined to America, there are the Humiriaceæ, which are American with one exception in W. Africa; the Turneraceæ are represented by a few species in the African region; the monotypic genus *Kissenia* is the only member of the Loasaceæ found out of America; and, with the exception of the genus *Rhipsalis*, the Cactaceæ are wholly American. Hence it will be seen that between what is wanting and what is peculiar to America in natural orders, the balance is somewhat in favour of the latter. This completes the review of the leading features in the distribution of the natural orders.

Something might be added here on the relative visible and spacious position occupied by the dominating orders in the different Floras; but as it is proposed dealing briefly with this part of the subject further on, some illustrations of generic and specific distribution are given first.

Generic and Specific Composition of the Floras of different Areas.

At page xix are given the relative numbers of orders, genera, and species in the Floras of India, Mexico, North America, and Australia; and although no special significance

* See vol. iv. pp. 202–207.

is to be attached to the fact, it is remarkable and noteworthy, as a matter of figures, what a close approach there is to uniformity in the proportions in each of these four dissimilar and distant areas. Thus:—

	Average number of Genera to an Order.	Average number of Species to a Genus.
India	13·0	6·0
Mexico	11·0	6·4
N. America	9·6	6·2
Australia	8·7	6·4

The proportions for the whole world, calculated from the numbers of the 'Genera Plantarum,' are 37·50 genera to an order, and 12·65 species to a genus; from which it appears that there is, approximately, half of the average number of species of a genus, and a third to less than a quarter of the average number of the genera of an order in each of these large areas. Taking a portion of the Cape Flora, the average number of species to a genus is 6·6 *; therefore between six and seven to one is probably the highest, or nearly the highest, average in large areas. Turning to other areas, the proportion of species is found to be much lower, and in certain insular Floras the genera are nearly as numerous as the species. In China the Polypetalous orders † yield about three species to a genus; and the proportions are nearly the same in the whole vascular plants of New Zealand, as well as in the Sandwich Islands. In Japan, the proportions are as 2·6 to 1; and of the probably endemic plants of St. Helena they are less than 1·4 to 1.

Such are the averages, which, as has been shown (vol. iv. pp. 212–217), are made up to a great extent by genera numerous in species and genera of one species each. In the Mexican Flora, for example, eighty-five genera contribute 4760 species, or 39 per cent. of the total, whilst other 660 genera are represented by only one species each, upwards of one third of them being absolutely monotypic. The composition of all large Floras, in which there is a high percentage of species to a genus, is similar; whereas in the Chinese and Japanese Floras there are exceedingly few very large genera, and at the same time a smaller proportion of monotypic genera. We have not counted the monotypic genera of the Indian Flora, but the proportions are probably very nearly the same as in the Mexican Flora. As mentioned elsewhere, Mueller ‡ states that there are 550 genera in Australia represented by only one species. With regard to large genera in the Indian Flora there are only seven of 100 species and upwards each, against ten in Mexico and four § in Australia; and there is nothing in either India or

* Harvey and Sonder's 'Flora Capensis,' vol. i., Ranunculaceæ to Connaraceæ, as estimated by Mr. N. E. Brown, in manuscript, in the Kew library.

† Forbes and Hemsley, "Index Floræ Sinensis," Journ. Linn. Soc., Bot. vol. xxiii.

‡ Lecture on the Flora of Australia, 1883, p. 11.

§ Six according to Mueller in the place cited, but he unites some genera retained by Bentham and Hooker.

Mexico approaching the 320 species of *Acacia* and 120 of *Eucalyptus* in Australia, and the 300 species of *Mesembryanthemum* and about 500 of *Erica* in South Africa, that is to say in point of numbers or as a feature in the whole vegetation, except the genus *Ficus*.

British Indian Genera of twenty-five Species and upwards.

Dendrobium	158	Ardisia	45	Ophiorrhiza	31
Strobilanthes	146	Piper	45	Capparis	30
Eugenia	131	Mallotus	45	Garcinia	30
Carex	131	Sonerila	43	Swertia	30
Impatiens	124	Rhododendron	43	Myristica	30
Ficus	112	Primula	43	Saccolabium	30
Habenaria	100	Jasminum	43	Hedychium	30
Panicum	92	Rubus	41	Scirpus	30
Quercus	82	Elæocarpus	40	Baccaurea	29
Cyperus	80	Indigofera	40	Ischæmum	29
Crotalaria	77	Memecylon	40	Ebermaiera	28
Vitis	75	Didymocarpus	40	Aporosa	28
Eria	73	Potentilla	39	Salix	28
Astragalus	70	Saussurea	39	Aneilema	28
Polygonum	70	Hoya	39	Euonymus	27
Bulbophyllum	70	Oberonia	39	Anaphalis	27
Litsea	65	Leucas	38	Artemisia	27
Begonia	64	Bauhinia	37	Solanum	27
Symplocos	64	Ixora	37	Cleistanthus	27
Senecio	63	Gentiana	37	Croton	27
Diospyros	59	Pedicularis	37	Macaranga	27
Glochidion	59	Liparis	37	Cirrhopetalum	27
Loranthus	58	Smilax	37	Osbeckia	26
Hedyotis	57	Grewia	36	Barleria	26
Ipomœa	57	Blumea	36	Cinnamomum	26
Phyllanthus	56	Ceropegia	36	Juncus	26
Fimbristylis	53	Calanthe	36	Allium	25
Psychotria	52	Saxifraga	35	Eriocaulon	26
Lasianthus	52	Amomum	35	Polyalthia	25
Euphorbia	52	Premna	34	Argyreia	25
Justicia	50	Hibiscus	33	Pogostemon	25
Calamus	50	Nepeta	33	Globba	25
Andropogon	50	Pollinia	33	Arisæma	25
Desmodium	49	Plectranthus	32	Arundinella	25
Cœlogyne	47	Antidesma	32	Eragrostis	25
Vernonia	45	Sterculia	31	Bambusa	25

Totals: genera 108; species 5041.

From these figures it appears that about 4·8 per cent. of the total number of genera

of flowering plants in the Flora of India yield nearly 37 per cent. of the total number of species. In Mexico 4·6 per cent. of the genera comprise 39 per cent. of the species; and in Australia the amounts are about 4·64 and 37 per cent. It is unnecessary to add that most of the above genera are widely spread, and many of them common to the New World.

Genera common to the widely separated areas of India and Mexico.

From the relations of the average number of species to a genus in the areas under consideration to the average for the whole world, it follows that the average area of a genus must be at least double one of these areas. But there is no necessary relation between the area a genus covers and the number of species it contains, though, speaking generally, monotypes have a restricted area. Indeed, if we exclude aquatic and sea-coast plants, and such as have probably been dispersed through human agency, it is difficult to multiply instances of monotypes with a large area. The curious *Cressa cretica* may be cited as a possible exception *. On the other hand, the species of some large genera are concentrated in one region, as *Eucalyptus* in Australia, and *Miconia* in America.

Disregarding exceptions, it may be stated that the genera and species of the northern Floras have the widest range; those of the tropics an intermediate one, and those characteristic of the southern Floras, excluding that of the coldest zone, the most restricted range. Probably not less than 75 per cent. of the genera of the Flora of Eastern America, north of Mexico, are represented in the Old World, for in some statistics on the vegetation of the north-eastern part of the United States, drawn up by the late Dr. A. Gray more than thirty years ago †, it is shown that 63 per cent. of the then known genera were common to America and Europe, or America and eastern temperate Asia. Since that date many others have proved to be common to America and the Old World, and the rich collections made by Dr. A. Henry within the last three years in Hupeh, one of the central provinces of China, have added several conspicuous genera to the number.

A careful comparison of the generic composition of the Mexican and Indian Floras reveals the fact that 581, or 25·58 per cent., of the Indian genera are likewise represented in Mexico. Our own table (vol. iv. pp. 207, 208) shows that more than a third of the Mexican genera are widely dispersed, that is to say, they occur as well in two or more of the large divisions of the Old World; and only 11 per cent. are endemic. Engler ‡ finds that only about an eighth of the tropical dicotyledonous genera inhabit both America and some part or parts of the Old World. On the other hand, 30·5 per cent. of the Australian genera and 35·5 per cent. of the South-African are endemic.

* Grisebach (Symb. ad Fl. Argent. p. 266) refers a second species to this genus with an extended diagnosis.

† Silliman's 'Journal of Science and Art,' 2nd series, xxii. (1856) pp. 204–231.

‡ Versuch einer Entwicklungsgeschichte der Florengebiete, ii. p. 174.

Comparing the number of endemic species of the Indian Flora with that of other parts of the world, it is somewhat surprising to discover that it is less than 2 per cent. below the Mexican, and not far below that of the Australian; being no less than 68·67 per cent. But such statistics embrace only one class of facts, the value of which will be briefly discussed in connection with the delimitation of the primary botanical regions.

On the Distribution of some of the largest Natural Orders.

Attention has already been directed to the illusory nature of mere statistical comparisons of the vegetation of different regions. In many Floras the orders richest in species are not those which give character to the scenery, or constitute the bulk of the vegetation; and the genera are sometimes less numerous and less diversified than those of many concomitant orders less numerous in species. This is pre-eminently the case with the orchids in India. Many of the species are exceedingly rare and local; many are small plants with inconspicuous flowers; and the comparatively small number of common species having large conspicuous flowers, lend colour to the vegetation rather than give character to it, and this only in certain districts. Here and there in the mountains, as we learn from travellers and residents, the rocks are clothed with orchids, and when they are in full flower form a conspicuous feature in the landscape. In South Mexico and Central America orchids, though third in order of predominance, pervade the whole country to a greater extent; yet here, as elsewhere, the existence of the preponderating epiphytic species depends largely on the arboreous vegetation. In Northern and Eastern India and Malaya, as in Mexico, orchids are specially abundant in the intermediate or oak region, and the numerous species of oak constitute one of the principal features in the vegetation. Lower down in the more tropical parts of India arboreous Leguminosæ, Euphorbiaceæ, figs, laurels, Dipterocarpeæ, Anonaceæ, together with Rubiaceæ, Acanthaceæ, Compositæ, Scitamineæ, Aroideæ, &c., constitute the bulk of the vegetation—some of these orders, their genera, or even species predominating in one district, some in another; but each or any of them entering more fully into the composition of the vegetation than orchids. Palms form a conspicuous feature on the coast and plains of India, where the more or less cultivated coco-nut, the palmyra (*Borassus*), and *Phœnix sylvestris* abound and cover large tracts; but there is little variety in the prominent species; and the order occupies the thirtieth position only by reason of the large number of species of rattan (*Calamus*) that inhabit the dense forests, and render them almost impenetrable. Nowhere is there anything resembling the highly diversified palm-groves of the Amazon region.

In Mexico the Compositæ outnumber the order next in sequence by upwards of 100 genera and 500 species, and although few of them exceed the stature of shrubs, they grow in almost every variety of situation; are often excessively numerous individually;

constitute a prominent part of the vegetation, and specially characterize the dry districts. Such highly characteristic Mexican orders as the Cactaceæ, Labiatæ (*Salvia*), Amaryllidaceæ (*Agave* and *Furcræa*), Aroideæ (*Anthurium*, *Philodendron*), and Liliaceæ (*Yucca* and *Dasylirion*) are as numerous in species as they are prominent in the scenery

Turning to the Australian flora we find almost complete agreement between the numerical strength of the natural orders in species, and their degrees of domination in the composition of the vegetation. The Leguminosæ stand at the head with upwards of a thousand species, including the highly characteristic phyllodineous Acacias, numbering three hundred species, and prominently pervading the whole country. Next come the Myrtaceæ, to which belong *Eucalyptus* (120 species), *Melaleuca* (100 species), *Verticordia*, *Calycothrix*, and *Darwinia*, with thirty-five species each; followed by the Proteaceæ (*Grevillea*, *Hakea*, *Banksia*), Compositæ (*Olearia*, *Helichrysum*), Cyperaceæ, Gramineæ, Orchideæ, Epacrideæ, Euphorbiaceæ, Goodeniaceæ, and Rutaceæ.

Similar conditions obtain in the Cape Flora, and a person possessing a fair knowledge of plants can, from statistics alone, form some conception of the nature and composition of the vegetation.

Before leaving this part of the subject it may not be amiss to mention the fact that the vegetation of different districts of a country may present more striking diversities and much more abrupt transitions than does the whole flora of one country as compared with that of another. Within a few yards the whole character of the vegetation often changes, owing to differences in the substratum of the soil and other causes. Mr. Salvin was particularly impressed by this fact in Guatemala, where, in travelling, you often literally step from an oak-forest into a pine-forest, with the carpet and canopy (epiphytes, &c.) of vegetation equally as different in character as are the pines and oaks themselves.

The Primary Botanical Regions of the World considered in their Relations to the Zoological Regions.

Very various are the divisions and subdivisions of the world proposed by different botanists and zoologists who have written on the geographical distribution of plants and animals; but the comparisons instituted here will be with the zoological regions originally defined by Dr. Sclater *, and subsequently adopted, with slight modifications, by other eminent zoologists, notably by Mr. Wallace in his very elaborate treatise on the present distribution of animals, more especially of the mammals. For convenience, his table of regions † and subregions is reproduced here, as it is more intelligible than

* Journ. Linn. Soc., Zool. vol. ii.

† The Geographical Distribution of Animals, 1876, i. p. 81.

a brief description of them would be; and where it is necessary the exact boundaries will be indicated in any comparisons made.

Wallace's Table of Zoological Regions and Subregions.

Regions.	Subregions.	Remarks.
I. Palæarctic	1. North Europe.	
	2. Mediterranean (or S. Europe).	Transition to Ethiopian.
	3. Siberia.	Transition to Nearctic.
	4. Manchuria (or Japan).	Transition to Oriental.
II. Ethiopian	1. East Africa.	Transition to Palæarctic.
	2. West Africa.	
	3. South Africa.	
	4. Madagascar.	
III. Oriental	1. Hindostan (or Central India).	Transition to Ethiopian.
	2. Ceylon.	
	3. Indo-China (or Himalayas).	Transition to Palæarctic.
	4. Indo-Malaya.	Transition to Australian.
IV. Australian	1. Austro-Malaya.	Transition to Oriental.
	2. Australia.	
	3. Polynesia.	
	4. New Zealand.	Transition to Neotropical.
V. Neotropical	1. Chili (or S. Temp. America).	Transition to Australian.
	2. Brazil.	
	3. Mexico (or Trop. N. America).	Transition to Nearctic.
	4. Antilles.	
VI. Nearctic	1. California.	
	2. Rocky Mountains.	Transition to Neotropical.
	3. Alleghanies (or East U.S.).	
	4. Canada.	Transition to Palæarctic.

Before explaining my own ideas on the primary phyto-geographical regions of the world, it may be of interest to give in outline the two latest attempts to define them, especially as one of these has been published in the form of a very elaborate atlas for educational purposes. In 1882 Dr. Engler * grouped the botanical regions of the earth, on the assumption that there existed in the Tertiary period four fundamental elements of the present vegetation, namely—the "Arctic Tertiary" element, the "Palæotropical" element, the "Neotropical" element, and the "Old Oceanic" element, which he

* Versuch einer Entwicklungsgeschichte der extratropischen Florengebiete der südlichen Hemisphäre und der tropischen Gebiete, pp. 326–347.

briefly defines, and then proceeds to divide the vegetation of the earth into "kingdoms, regions, provinces, zones, and districts." To give the whole of his subdivisions would occupy more space than can be afforded, and carry us beyond what is necessary in this discussion. His primary divisions are four, corresponding to his four Tertiary elements. These are:—the northern extratropical floral kingdom, the palæotropical floral kingdom, the South-American floral kingdom, and the old oceanic floral kingdom. In conformity with English usage we will call his primary divisions regions and the secondary ones subregions; and where we have occasion to refer to the smaller divisions, the names given above will be employed. Engler's secondary divisions are as follows:—

1. Northern Extratropical Region.

Subregions: 1. Arctic; 2. Subarctic or Conifer; 3. Central Asiatic; 4. Mediterranean; 5. Mandshurian and Japanese; 6. North-American Pacific; 7. North-American Atlantic.

2. Palæotropic Region.

Subregions: 1. West-African forest; 2. African and Arabian desert; 3. Malagassy; 4. Western Indian; 5. Tropical Himalayan; 6. East-Asiatic; 7. Malayan; 8. Araucaria; 9. Polynesian; 10. Sandwich Island.

3. South-American Region.

Subregions: 1. Mexican Highlands; 2. Tropical American; 3. Andine; 4. Galapagos; 5. Juan Fernandez.

4. Old Oceanic Region.

Subregions: 1. Antarctic forest of South America; 2. New-Zealand; 3. Australian; 4. Kerguelen; 5. Amsterdam Island; 6. Cape; 7. Tristan d'Acunha; 8. St. Helena.

The ternary subdivisions or provinces of the Northern Extratropical Region of the above scheme are about forty; many of them are divided into several zones, and some of them again into numerous districts. Subdivision is, for obvious reasons, not carried so far in the three other regions.

I have already put on record * my objections to that part of Dr. Engler's scheme relating to oceanic islands and the "antarctic" Flora; but I have now to deal with it as a whole. Theoretically there may be much to justify his regions; yet it seems to me that any attempt at division based partly upon assumed, or even proved, anterior conditions, and partly on present conditions, is unsatisfactory and confusing. On this point Wallace says †:—"Our object is to represent as nearly as possible the

* Botany of the 'Challenger' Expedition, i. Introduction, p. 50.

† The Geographical Distribution of Animals, i. p. 55.

main features of the distribution of existing animals, not those of any or all past geological epochs. Should we ever obtain sufficient information as to the geography and biology of the earth in past epochs, we might indeed determine approximately what were the Pliocene, Miocene, or Eocene zoological regions; but any attempt to exhibit all these in combination with those of our own period must lead to confusion." This objection applies with equal force to any botanical division; and as a critical examination of Engler's scheme would involve the discussion of questions beyond the scope of the present inquiry, it is sufficient for the purpose to have brought it under notice, though it should be added that it is full of valuable matter, and has been largely utilized in the present work.

The other scheme referred to above is by Dr. Drude. It was originally published in 1884 *, and again in 1887 as an independent work †. As explained in the title given below, this is a representation of the present conditions of the distribution of plants; hence it has a greater demand on our attention. Drude divides the world into fourteen "floral kingdoms," namely—(1) Northern, (2) Central Asian, (3) Mediterranean, (4) East Asian, (5) Middle North American, (6) Tropical African, (7) East African Islands, (8) Indian, (9) Tropical American, (10) Cape, (11) Australian, (12) New Zealand, (13) Andine, (14) Antarctic. Most of these regions are subdivided, and the overlapping of the elements of different regions is indicated by lines and dots.

As Drude himself remarks, we are all striving and devising with the same aim in view, and we arrive by different ways to much the same conclusions. He claims that he obtains practically the same results as Engler, but by different methods; that Engler's scheme is, after all, based essentially on present conditions; and says that there is far more difference in the arguments of the writers on phytogeography than there is in their deductions and cartographical illustrations. This is doubtless true to a certain extent, because there are certain facts which no student can overlook or disregard; yet it is none the less true that one begins with four and the other with fourteen regions, and therefore there must be a wide difference in their value and extent.

Engler's scheme, based upon a small number of primary regions, commends itself because these are much more nearly of equal importance than are Drude's; but his old oceanic region is altogether inadmissible from the standpoint here taken, involving, as it does, the relegation of the Northern Island of New Zealand to one of his primary divisions and the Southern to another.

A small number of primary divisions undoubtedly offers the least difficult basis for further division. Equivalent regions and subregions it is impossible to define, because

* "Die Florenreiche der Erde. Darstellung der gegenwärtigen Verbreitungsverhältnisse der Pflanzen, mit 3 Karten." Ergänzungsheft no. 74 zu Petermann's Mittheilungen.

† Atlas der Pflanzenverbreitung.

they no more exist in nature than do absolute differential characters between many natural orders or genera of plants; but Drude has too many and unnecessarily unequal regions. Several of them correspond, or very nearly so, to the secondary divisions of other writers, and are not unnatural in this sense; yet we do not agree with the author in raising them to primary rank. On the other hand, his Indian region embraces tropical Asia, the whole of the Pacific Islands, from New Caledonia to the Sandwich Islands, and a large area of North Australia. It is unnecessary to dwell upon the great disparity of this region as compared with his East-African Islands region, or his New Zealand region of the same rank.

With regard to the Flora of the Sandwich Islands, it is so highly specialized, and its affinities so complex, that it cannot be included in any primary region without the question arising whether it might not with equal propriety have been included in another, as will hereafter be shown.

The Flora of North Australia undoubtedly contains a large tropical element consisting of species, many endemic, of Asiatic genera, or genera of wider range; but the elimination of such species as are common sea-shore plants throughout the eastern tropical region would considerably reduce this element. It is equally true that some of the orders and tribes specially characteristic of the Australian Flora are almost entirely wanting, such as the Epacrideæ, Rhamnaceæ, Myoporineæ, Boronieæ, the Podalyrieæ, and some others; but are these two conditions sufficiently developed to justify separation in a primary division and annexation to the eastern tropical region? Drude appears to have separated it because it is tropical. Wherever the boundaries are drawn there will be overlapping of different elements to some extent, and a more natural boundary in this region is further north. Even if in the north-eastern coast district the composition of the vegetation is more Asiatic in character, it is not so in the north-west. Whatever the amount of infusion of Asiatic types may be in North Australia, and whatever groups are wanting or rare, the highly characteristic Australian gum-trees (*Eucalyptus*) and the phyllodineous Acacias are represented respectively by twenty-five and sixty-seven species; Proteaceæ by about thirty-five species; Stylidieæ and Goodeniaceæ combined by upwards of fifty species; Amarantaceæ by nearly sixty species; capsular Myrtaceæ, exclusive of *Eucalyptus*, by about thirty species; and many characteristic Australian genera, such as *Dodonæa* and *Stackhousia*, are also present, though numerically few.

There seems even less reason for including New Caledonia in the Indian region, for although the Rubiaceæ and sarcocarpous Myrtaceæ appear to be the dominating groups, yet the vegetation generally is more Australian than tropical Asiatic in character. As Baron Mueller observes *, New Caledonia is the only country outside of Australia where capsular Myrtaceæ are largely developed, though they include

* A Lecture on the Flora of Australia, 1882, p. 16.

no species of *Eucalyptus*. Only fragments of the New Caledonian flora have been published, but from a rough manuscript list of New Caledonian plants contained in the Paris Herbarium, compiled by Sir Joseph Hooker twenty-five years ago, the Australasian character of the vegetation is evident. Examples are offered by such genera as *Cordyline* *, *Dianella*, *Araucaria*, *Frenela*, *Dacrydium*, *Hedycarya*, *Casuarina* (five species), *Exocarpus*, *Grevillea*, *Cenarrhenes*, *Knightia*, *Stenocarpus*, *Myoporum* (four species), *Leucopogon* (twelve species), *Dracophyllum* (ten species), *Hibbertia* (fifteen species), *Pittosporum* (twenty-five species), and *Boronia* (eighteen species). It is noteworthy that the phanerogamic flora of New Caledonia, unlike that of New Zealand, is exceedingly rich in species, yet, as in New Zealand, many characteristic Australian groups of plants are wholly wanting.

The flora of New Zealand has been so exhaustively discussed by Hooker, Wallace, Engler, and others, that it is inexplicable why Drude should have raised it to the rank of a primary region. It is remarkable for its poverty and the total absence of many of the most characteristic Australian types; yet, apart from the extraordinary development of such widely spread genera as *Ranunculus*, *Epilobium*, and *Veronica*, the flora is so essentially Australian that it is difficult to understand why there should be any hesitation in treating it as a subregion of the Australasian flora; especially by an author who would include the Sandwich Islands in the Indian region.

As far as the Flora of Madagascar and adjacent islands is concerned, the reasons for regarding it as a primary region are more intelligible; and some zoologists have proposed the same thing; but recent explorations prove that it should rank as a subregion of Africa †. Although rich in endemic genera and species, it is not relatively more so probably than the Malay Archipelago or Ceylon in Asia. It is true that the small order Chlænaceæ is apparently peculiar to the island, for there is little doubt that the two members of this order recorded from Mozambique were collected by Forbes on the Madagascar side of the channel of that name. Briefly, the forest flora of Madagascar is closely related to that of tropical Africa, while South-African forms reappear in the hill flora; and it exhibits still closer affinities with Mauritius, Bourbon, and the neighbouring islands.

Sufficient has been advanced perhaps to show that Drude's divisions are not always the best that could be devised, and that his primary divisions are too numerous, or, from another standpoint, not numerous enough to attain the nearest approach to equality.

Ten years ago Mr. Thiselton Dyer ‡ drew up a concise and pregnant sketch of the

* It must not be assumed that the generic identifications hastily made are in all instances absolutely correct.

† See Baker in 'Journal of Botany,' 1881.

‡ "A Lecture on Plant Distribution as a field for Geographical Researches," Proceedings of the Royal Geographical Society, xxii. 1878.

geographical distribution of plants, in which he deals with both present and past conditions, more especially in relation to the theory of a general southward migration. He groups the Floras of the world into northern, tropical, and southern, and enters into particulars of the characters, relationships, connections, and dissimilarities of these groups. Drude groups his primary divisions in the same manner *; and this is perhaps the most philosophical method of dealing with them, though, on account of the greater differentiation the southern Floras present, it is preferable to consider them separately—that is to say to give the Australian, African, and South-American regions the same rank as the great northern region, and treat their tropical and temperate parts as subregions of so many regions, rather than subregions of a south temperate and a tropical zone respectively. Too close an adherence to climatal primary regions leads to unnatural combinations, as has been pointed out in regard to Drude's Indian region. But before entering more fully into the limits of the primary botanical regions, Wallace's zoological regions will be briefly discussed in relation to the distribution of plants.

Comparison of the Zoological with the Botanical Regions.

Wallace based his zoological divisions (as tabulated, page xxviii) on the present distribution of mammals, having, after years of study and research, arrived at the conviction that this class furnished the best foundation for the purpose. He also found that the distribution of birds and other groups harmonized sufficiently with such a division, and any anomalies or divergences in their distribution were capable of explanation by a study of the exceptional means of dispersal and conditions of existence. Still he is careful to emphasize the fact that any system of division must necessarily be more or less arbitrary and artificial, and not equally applicable to all classes of animals. Such mammals as the bats, which fly, and the oceanic mammals, which swim, possess exceptional means of dispersal, and therefore they are not taken into consideration. These exceptions and many other phenomena of distribution in the animal kingdom are paralleled in the vegetable kingdom, but no intelligible system of botanical division could be based on the distribution of any one group of plants less comprehensive than the Phanerogamia, because the large orders, such as the Compositæ or Leguminosæ, comprise plants of every size, habit, and duration, inhabiting every kind of situation. As an illustration of the wide dispersal of a very large proportion of the natural orders of plants, the reader may be referred back to the analysis of the flora of British India, pp. xv–xxii. Generally speaking, the smaller a Flora the larger the proportions of orders and genera to the total number of species†.

* Petermann's 'Geographische Mittheilungen,' Ergänzungsheft lxxiv. p. 43.

† The indigenous Phanerogamic Flora of the Bermudas, for example, is estimated at 120 species belonging to ninety-eight genera and forty-eight orders. See Botany of the 'Challenger' Expedition, i. p. 8.

Notwithstanding the different and often greater means of dispersal possessed by plants, it is surprising how very similar are the broad features of the distribution of plants and animals. Doubtless this is owing in part to interdependence; and extensions of area of members of the two kingdoms have probably often been contemporaneous. Still, there are important divergences, and the primary regions of plants and animals cannot always be held as conterminous; assuming, of course, that Wallace has adopted the most natural divisions that could be found. This is most strikingly exemplified in the northern floras. Wallace was able to keep separate the eastern and western hemispheres, even in the north; and his palæarctic and nearctic regions he defends against the opinion of Huxley*, the endemic element being nearly equal in the two. On the merits of the question of one or two primary northern zoological regions it is not proposed to enter; but such a division cannot well be sustained in the vegetable kingdom, the alternative being more than two. Dr. Asa Gray long ago† pointed out the intimate relationships existing between the floras of Japan and North America, especially eastern North America: and the rich collections from Central China received at Kew within the last two years have added considerably to the number of genera, and almost identical species, common to Eastern Asia and Eastern America. Many of these extend to the mountains of North India, and a very few farther westward; but the affinities of the Floras of Eastern Asia and Eastern America are vastly greater than either exhibits with that of Europe. It is only in the higher latitude of North Corea and Mandshuria and northward that the vegetation bears a strong likeness to the European; but even there the relative proportion of woody plants is much higher than in Europe‡. However, it seems clear that the whole north temperate and arctic flora is better considered as forming one primary botanical region, with extensions, or remains of extensions, through the mountain-chains to the Australasian Alps, Tierra del Fuego, and the mountains of Tropical Africa, with only very faint traces in South Africa§.

The alternative of more than two primary northern botanical regions seems quite inadmissible; and this is the opinion of Engler, who has also specially examined the palæontological evidence, which proves that many of the genera of E. Asia and Eastern N. America formerly existed in Europe. If more than one primary northern region be admitted, we must, like Drude, recognize five or six; and, after all, there are no

* See 'Proceedings of the Zoological Society of London,' 1868, pp. 313–319: "the Geographical Distribution of the Alectoromorphæ," where the author suggests the propriety of two primary zoological regions, namely, a northern and a southern. As an alternative he proposes four primary regions, namely: 1. Arctogæa (practically Europe, Asia, North America, and Africa); 2. Austro-Columbia (South and Central America); 3. Australasia (Australia and New Guinea to Celebes and the Philippines); and 4. New Zealand.

† 'Memoirs of the American Academy of Arts and Sciences,' n. s. vi. 1858–59; and more fully elaborated by Engler, 'Versuch,' i. pp. 22–43 (1879).

‡ Maximowicz in Bull. Congr. Intern. Bot. et Hort. St. Petersb. 1884, p. 152.

§ Sir Joseph Hooker enters fully into the distribution of "Scandinavian Forms," Transactions of the Linnean Society, xxiii. p. 251.

sharper contrasts in the vegetation of different areas of this large region than there are in the Indian, the Australian, or any of the southern regions. The poverty in genera and species of the woody element of the European and West-American Floras and its extreme richness in the Floras of China and Japan and Eastern N. America are well known; but with very few exceptions the genera of the former Floras are represented in the latter. As Gray remarks:—"All round the world in our zone the woods contain Pines and Firs and Larches, Cypresses and Junipers, Oaks and Birches, Willows and Poplars, Maples and Ashes, and the like"*. The distribution of many of the genera of herbaceous plants of the poorer Floras is even wider. Thus, in California, where there is an enormous development of peculiar genera of some orders, the Ranunculaceæ are represented by thirteen genera, whereof eleven are also British, and one other is European, and the solitary one remaining is anomalous and endemic, and has been referred to various natural orders. The Orchidaceæ, again, are represented by ten genera, eight of which are British. *Calypso borealis* is a native of Northern Europe and Siberia, and the monotypic *Aplectrum* ranges across the continent to the Atlantic, being the only one restricted to America.

The subregions of Wallace's palæarctic and nearctic zoological regions are perhaps less in harmony with botanical subregions than those of any other part of the world. His Mediterranean and Mandshurian subregions in the Old World, and his Californian, Rocky Mountains, and Eastern United States in the New World, are, however, substantially identical with botanical subregions. It does not come within the scope of this sketch to examine and discuss all these subregions, but a few remarks follow on the Chinese and North-Mexican Floras, which have recently been more fully investigated. In a lecture delivered before the Royal Institution of Great Britain in 1878, and afterwards published, Sir Joseph Hooker explains the main features of the distribution of the Flora of North America, and Professor C. S. Sargent has exhaustively described and elaborately illustrated cartographically the distribution of the arboreous element†; and Mr. C. J. Maximowicz has made a valuable contribution to the botanical geography of Central Asia in a paper which has already been referred to‡. In these and various other more generally known publications much new light is thrown on the nature, composition, and distribution of the vegetation of the countries under consideration.

With regard to Wallace's Mandshurian or Japanese subregion, as already hinted, a corresponding botanical subregion would be differently bounded; its northern limit barely reaching Peking and its western limit not extending so far, if at all, into

* "Forest Geography and Archæology," Am. Journ. Sc. xvi. (1878) p. 183.

† 'Report on the Forests of North America (exclusive of Mexico).' Department of the Interior: Census Office, 1884.

‡ "Sur les Collections botaniques de la Mongolie et du Tibet septentrional (Tangout) recueillies récemment par des voyageurs Russes et conservées à St. Pétersbourg," Bulletin du Congrès International de Botanique et d'Horticulture à St. Pétersbourg, 1884, pp. 135–196.

Mongolia. In the present comparatively early stage of an enumeration of Chinese plants * the data are not forthcoming to describe exactly where this subregion should be bounded, but it is warm temperate in climate, and characterized by having a very large woody element, with intimate Himalayan and Eastern North-American connections. Rarity of annual plants is also strongly marked. Collections received since the publication of the parts of the 'Index' issued have very largely augmented the numbers of genera and species, especially of the earlier orders, which were elaborated before even the first collection came to hand. Therefore data taken from it alone are imperfect beyond even what is known of the flora. To give some idea of the large number of species concentrated in a small area, it may be mentioned that Dr. A. Henry has collected upwards of a thousand species of flowering plants within a short distance of Ichang, and at a very moderate estimate ten per cent. of them were previously unknown.

A rough analysis of the Polypetalæ enumerated in the 'Index' gives a total, excluding cultivated and doubtful ones, of 1514 species belonging to 476 genera and sixty-six (out of a total of eighty-five) natural orders. Fourteen of the genera and 626 (or 41·3 per cent.) of the species are apparently endemic, but these figures do not represent the true proportions, because all the common plants of the coast districts are included, and it is very imperfect as far as regards the interior. The small number of species to a genus (about three), half the number found in the larger areas examined, has already been commented upon. The distribution of the non-endemic species in the above total, so far as it is known, is as follows:—140 extend to Japan only; 90 to India only; 27 to India and Japan only; 273 others are restricted to Asia, inhabiting some other part or parts than Japan or India, or besides Japan and India; and the remaining 357 (nearly a quarter of the non-endemic) are of wider range.

Other remarkable features in the Chinese Flora are the great latitudinal range of some of the species, and the high northern localities of some subtropical types, such as *Nelumbo*, *Euryale*, and *Cedrela*. The same phenomenon is exemplified in the animal kingdom.

Returning to the New World, it will be seen that Wallace's Rocky Mountains subregion embraces the North-Mexican province, as roughly defined in vol. iv. pp. 139 and 306, and the country northward to about 55° lat., and from about 97° long. westward to the coast range; thus covering the whole prairie and treeless regions, the central mountain-range, and Lower California. The corresponding botanical subregion occupies a similar but rather more restricted area, and it is essentially a dry one, falling into several provinces, one of which, the North-Mexican, is approximately defined and characterized in the place cited. Dr. Asa Gray and Sir Joseph Hooker seem to have had some such division in view, though they do not go the length of actually

* "Index Floræ Sinensis," Forbes and Hemsley in Journ. Linn. Soc., Bot. vol. xxiii.

proposing subdivision beyond the three great floras, namely, the Atlantic, Central, and Pacific *.

The Californian subregion, which is practically the Sierra-Nevada range and the narrow strip of country westward of it, is more highly specialized botanically than it would appear to be zoologically.

The only other of Wallace's primary zoological regions which differs materially from the botanical region of the same part of the world is the Australian. This he divides into four subregions †, all of which, except the 'Austro-Malayan,' are sufficiently indicated by their names. The Austro-Malayan subregion, of which New Guinea is the centre, includes the surrounding islands and groups of islands from the Louisiade Archipelago to Timor, Lombok, Celebes, Gilolo, Admiralty, New Britain, New Ireland, and the Solomon group. There is no great change in the vegetation such as to justify the separation of Eastern Malaya and New Guinea from the India region, or Oriental region, as Wallace names it. Indeed, botanically, it is naturally a subregion of the Asiatic and not of the Australian region. It is true that a number of Australian types extend into this subregion, and a few even beyond; but they form a very small percentage, and nowhere, so far as is known, do they constitute a feature in the vegetation. Including all the common sea-shore plants, Miquel's statistics of the Malayan flora ‡ show that less than 4·2 per cent. of the Malayan Phanerogamia are also found either in Australia or Polynesia. However, very little was then known of the vegetation of New Guinea; but from an examination of Dr. Beccari's and Baron von Mueller's considerable subsequent contributions to Papuan botany, it appears that although such specially characteristic Australian genera as *Eucalyptus*, *Acacia* (phyllodineous species), *Styphelia*, *Stackhousia*, *Banksia*, and *Grevillea* are represented by one or two species each, the bulk of the Papuan vegetation is more Asiatic than Australian in character, and exceedingly rich in peculiar forms.

On Outlying Australian types of Vegetation.

A few words respecting the wider extensions of Australian types apart from those belonging mainly to the cold temperate region, which have been pretty fully tabulated by Hooker and Engler, and more recently by the writer §. *Eucalyptus papuana* and at least one other species inhabit New Guinea ‖; *E. alba*, and possibly one other species, is a native of Timor; and Blume records *Eucalyptus deglupta*, from the Celebes; but the genus of this tree is very uncertain, as neither flowers nor fruit were known to the

* "Vegetation of the Rocky Mountain Region," Bulletin of the U.S. Geol. and Geogr. Survey, vi. no. 1, p. 62; and Sir Joseph Hooker's Lecture previously referred to.

† See Table, *antè*, p. xxviii.

‡ 'Flora Indiæ Batavæ,' iii. pp. 763–773.

§ Botany of the 'Challenger' Expedition, i. Introduction, pp. 50–58.

‖ Mueller 'Eucalyptographia,' under *Eucalyptus alba*.

author. With regard to *Eucalyptus multiflora*, Rich*, from Mindanao, one of the Philippine Islands, there is also great doubt as to the genus; and no species of *Eucalyptus* is in any of the older or the large recent collections at Kew from that archipelago. Therefore the range of the genus *Eucalyptus*, so far as it is known with absolute certainty, is from Tasmania to New Guinea and Timor, and it is essentially a warm temperate type. *Acacia*, on the other hand, is almost wholly tropical in its distribution outside of Australia, and the phyllodineous section, which numbers hard upon 300 species in Australia, exhibits some much wider and very remarkable extensions. Two or three species of this section inhabit New Caledonia and other islands of the South Pacific. *Acacia richii* is a native of the Fiji Islands, and specimens indistinguishable from it have been collected in Formosa, separated by forty degrees of latitude and sixty of longitude, though it may exist and yet be found in some intermediate stations. Another species (*A. heterophylla*) is indigenous in Mauritius and Bourbon, and possibly also in Madagascar†, and the Sandwich-Island *A. koa* is so near it that the late Mr. Bentham was of opinion that it was a form of that species‡.

The capsular Myrtaceæ, which are so specially Australian (New Zealand and New Caledonia) extend to China and the Malayan peninsula, where they are represented by one, or in some instances two or three species, of the genera *Bœckea*, *Leptospermum*, *Tristania*, and *Melaleuca*. *Xanthostemon*, another genus of the same group, is confined to Australia and New Caledonia, with the exception of the Philippine Island *X. verdugonianus*. *Stylidium* is perhaps the only strictly Australian type extending into the heart of India, even to the foot of the Sikkim Himalaya. It is a genus numbering eighty-five Australian species and three Indian—one of the latter being also a native of North Australia, a second scarcely more than a variety of it, while the third is quite distinct. *Leucopogon*, an Australian Epacrideous genus of nearly 120 species, extends to the Philippines, yet there are only two species known from the whole Malay Archipelago. *Helicia* is apparently the only genus of the Proteaceæ extending north of New Guinea into Asia, and this, although represented in Australia, has its greatest concentration in Malaya and India—ten species being found within the limits of British India, three of which inhabit Ceylon and the Western Deccan peninsula. One species is a native of Japan, and one, or more, of South China and Formosa.

Extensions of Australian types into Eastern Polynesia are relatively more numerous than into Malaya, yet they do not predominate over the other elements of these small insular floras; and there is such an intermingling of American, Asiatic, and Australian types in the much more highly-developed Sandwich-Island Flora, that it cannot,

* A. Gray, Botany U.S. Exploring Expedition, i. p. 554.

† Mr. J. G. Baker informs us, on the authority of Mr. Baron, that there is a possible chance of his lately-described *Acacia xiphoclada*, from Madagascar, being an introduced Australian species.

‡ In addition to *A. koa*, two endemic species are described in Hillebrand's lately-published 'Flora of the Hawaiian Islands.'

as already observed, justly be regarded as appertaining to any one of the great primary regions of vegetation. The characteristic endemic shrubby Compositæ* and Lobeliaceæ are most nearly related to American forms; *Perrottetia* is a Mexican and Colombian genus, and the pomaceous *Osteomeles anthyllidifolia* is a member of a genus all the other species of which are Andine. *Nama* is otherwise restricted to America; and Hillebrand regards the American *Lythrum maritimum*, *Daucus pusillus*, and *Aster divaricatus* (=*A. exilis*) as indigenous. Prominent among the Australian types and common in all the islands according to Hillebrand are:—*Metrosideros polymorpha*, an exceedingly variable tree or shrub scattered throughout Polynesia, eastward to Pitcairn Island, and *Acacia koa*, already alluded to. The Australian genera *Cyathodes* and *Exocarpus* are also represented†. *Cyrtandra*, of which there are thirty-two species endemic in the Sandwich Islands, is more Malayan in character, and many other such relationships exist, besides other more remote ones in the highest mountain flora, which includes such forms as *Luzula campestris*, *Rumex*, *Silene*, *Ranunculus*, *Drosera longifolia*, *Hydrocotyle interrupta*, *Fragaria chilensis*, *Vicia*, *Vaccinium*, *Aster*, and *Artemisia*.

Added to the foregoing elements is a sea-shore element consisting almost exclusively of species having a very wide range in the Old World; many of them from the eastern coast of Africa or the Mascarene Islands and India to N. Australia, the Marquesas Islands and Easter Island. Further, the vegetation of the small and remote coral islands is entirely of this character.

Besides the phyllodineous *Acacia* above alluded to, it has long been known that there were two or three other noteworthy outlying Australian types in Madagascar; but no important addition to these has been made by recent explorations. One or two species of *Hibbertia* (Dilleniaceæ), and two or three of *Rulingia* (Sterculiaceæ-Lasiopetalæ); and the genus *Adansonia* is represented by one endemic species in Madagascar, one in tropical Africa, and one in North Australia. These widely-sundered areas of distribution of closely-allied forms have given rise to much speculation, and it is very problematical whether satisfactory palæontological evidence will ever be forthcoming which will account for the existing distribution of plants.

Botanical Division of the Earth into Primary Regions.

From the data adduced in the preceding paragraphs, and numerous more familiar facts which it is unnecessary to repeat, it is clear that a system of botanical geography should be based upon a small number of primary regions, similar in many respects to Sclater and Wallace's zoological regions. It has been shown where the botanical regions do not even approximately coincide with the zoological regions, and to some

* See Bentham in Journ. Linn. Soc. xiii. p. 555.

† The Madagascar plant, long supposed to be a species of *Exocarpus*, as only foliage was known, is *Neobaronia*, Baker, a new genus of Leguminosæ, of which flowering specimens of two species have been collected by Mr. Baron.

extent also this has been done for the subregions or secondary divisions; but it is obviously beyond the scope of the present sketch to pursue this to the end. Yet, without attempting to define secondary and further divisions of all the primary regions, it may be possible to give further particulars, which, with what has preceded, shall convey some general idea of the extensions of the characteristic types of the floras of these regions.

Wallace states that nothing like a perfect zoological division of the earth is possible; and a perfect botanical division is equally impossible. Therefore the aim is a division that conveys in itself some notion of the extent of the dispersion of the characteristic types of each region. As already pointed out, it is obvious that a botanical division cannot be based on one class of plants, equivalent, if such could be found, to the Mammalia; but rather on the general composition of the vegetation, and largely, too, apart from latitudinal position. On this plan it is not difficult to distinguish five primary regions; but if this number be exceeded, it must be doubled or trebled with a less satisfactory result. These five primary regions are:—

1. Northern.
2. African.
3. Indian.
4. South American.
5. Australasian.

These regions are unequal in extent, and the southern divisions are meridional rather than latitudinal; but the greater degree of differentiation of the vegetation justifies such a division; and a natural subdivision of the northern region, excluding the arctic zone, and, perhaps, the coldest arboreal zone, is in the same direction. But these five regions do not include quite all, because, for reasons given, the Sandwich-Island Flora cannot consistently be included in any one of them; and it would convey a false impression to rank this comparatively small, though highly peculiar Flora, as a primary region. Further, there is a remnant of an antarctic Flora which is scattered all round the hemisphere, constituting the coldest southern zone of vegetation. These exceptional phanerogamic Floras will be separately discussed.

An alternative primary division, which is more in accord with the writings of many botanists, and has some practical advantages over the one proposed, may be thus stated:—

1. Northern Region.
2. Neotropical Region.
3. Palæotropical Region.
4. Andine Region.
5. Cape Region.
6. Australasian Region.

The anomalous Sandwich-Islands Flora and the fragmentary Antarctic Flora would be unattached in this, as in the foregoing plan. It is unnecessary to define these alternative regions, as their denominations are sufficiently descriptive to be intelligible. One of the advantages this division possesses over the one advocated, or rather the one point in which it radically differs, is the separation of the tropical and temperate

Floras in the primary regions of the southern hemisphere. Elsewhere reasons are given for treating the Cape and Andine Floras as subregions of more extended areas. Another important difference is the retention of three south temperate regions against one north temperate region, which brings out more prominently the greater differentiation of the vegetation of the southern hemisphere. Practically the plan proposed in this sketch recognizes and deals with these facts, although it does not bring them into direct contrast.

There is yet another way of treating the subject, one that obviates the necessity for defined regions and subregions, and one that may be effectively employed for conveying an idea of the broad features of the distribution of plants: it is by grouping the Floras into northern, tropical, and southern, as was done by Thiselton Dyer in the lecture on the geography of plants, which has been referred to before.

Some further justification of the plan here adopted will now be attempted, but it is not intended to recapitulate well-known facts and traverse familiar ground. The intention is rather to bring together some facts and data additional to those collected in the Appendix, or adduced in the preceding paragraphs of the present sketch.

The Northern Region.

This corresponds very closely to Wallace's Arctic and Palæarctic regions combined, and is adopted for reasons already sufficiently explained; the close relationship of the Floras of Eastern Asia and of North America, especially eastern, than of either of these and the European being the principal reason. A rough subdivision of this region gives eight subregions, namely :—an Arctic, a North and Mid-European and Central Asian, a Mediterranean, a Chino-Japanese, and in America a continuation of the Arctic, a boreal, an Atlantic, a Central, and a Pacific subregion. In the Old World we find that the vegetation of North and Central Europe extends to the extreme east of Asia, associated there with an endemic element, which increases so much in China, south of about the fortieth parallel, and in Japan, as to constitute of these countries a distinct subregion, exceedingly rich in trees and shrubs—richer even than the Atlantic subregion of North America. The transition from the Chinese Flora to that of a more European character is very sudden on entering Mandshuria, where probably in some districts fifty per cent. of the species are European. Maximowicz gives * some interesting figures illustrating the gradual diminution of the absolute numbers and percentages of species having a wide area—that is circumpolar, or common to both Europe and Asia. Thus in Baikal-Dahuria the figures are 747 species, =53·4 per cent.; in Mongolia 599 species, =46·2 per cent.; in Mandshuria 533 species, =39·6; Peking district, 318 species, =31·9 per cent.; Japan, 442 species, =16·2 per cent. The percentages of endemic species in these five areas are respectively 9·4, 8·3, 8·7, 13·3, and 44·0. Maximowicz comments on the great fall in the percentage of the endemic element passing from

* Bull. Congr. Intern. Bot. Hort. Pétersb. 1884, p. 164.

Japan to the continent. This is so in the latitude of Peking; but the more southern province of Hupeh, for instance, would show a much higher percentage than Peking, and possibly even higher than Japan, inasmuch as the Polypetalæ of the whole of China proper, so far as known *, contain 41·34 per cent. of endemic species, and there is no doubt that the further exploration of the interior provinces will materially raise this percentage.

Maximowicz very elaborately analyses the affinities of the endemic species in the areas named, from which it appears that it is only in Japan that there is a considerable development of endemic species of what he terms the Chinese type. On the other hand, the "levantine type" is apparent in 13·9 per cent. of the endemic species of Mongolia. To be brief, Maximowicz sums up this question in words to the effect that the plants of the plains of Northern and Central Europe constitute the greater part of the flora eastward to the Pacific coast, if not in identical forms, at least by forms connected by intermediates with European species †.

It would carry us too far to attempt to give the exact eastern limits of the Mediterranean region in Asia, as it would involve a discussion of the vegetation of the various provinces of this subregion. The southern limits of the northern region in the Old World may be indicated approximately as the tropics, varying in different longitudes. It includes the alpine and temperate Flora of the Himalayas, and in Africa it extends to the Great Atlas ‡.

The subregions of the northern region in the New World are five, namely:—Arctic, Boreal, Atlantic, Central, and Pacific, which may be roughly defined. Briefly the Arctic is a continuation of the same subregion in the Old World; the Boreal is a westward extension of the hardier elements of the Atlantic subregion, and perhaps better regarded as a province of it; the southern or Mexican province of the Central subregion is fully described in the Appendix; and further particulars of the characteristics of the whole Rocky-Mountain Flora will be found in the joint essay, by the late Dr. A. Gray and Sir Joseph Hooker, previously cited. The distribution of the North-American Flora generally is admirably summarized by the latter §, who distinguishes the Sink country between the Rocky Mountains and the Sierra Nevada as a separate Flora, while admitting that cacti and yucca attain their maximum development further south in the same meridian. Professor Sargent describes his northern forest-region as extending southward to the fiftieth parallel on the Atlantic coast and to the fifty-fourth at the hundredth meridian ‖.

* "Index Floræ Sinensis," Journ. Linn. Soc. xxiii.

† In a recent collection of about 500 species, made in Mandshuria by Mr. H. E. M. James, nearly a third are British species (see 'Proceedings of the Royal Geographical Society,' 1887, p. 548).

‡ For an account of the vegetation of these mountains consult Hooker and Ball's 'Tour in Morocco,' 1878.

§ Proceedings of the Royal Institution of Great Britain, 1878.

‖ Report on the Forests of North America, p. 3.

Allusion has been made to the southward extension of elements of the Flora of the northern region through the great mountain-ranges to the southern limits of vegetation, and indications where there are remains of it on the mountains within the tropics and in south temperate countries. Sir Joseph Hooker's reports on the vegetation of Clarence Peak, Fernando Po, of the Cameroons mountains, and of Kilima-njaro are among the most important of the later contributions to the literature of this subject *.

The African Region.

The phytogeographical essays last referred to afford some most interesting details of the relationships and apparent migrations of the components of the vegetation of the great African region, which is here understood to comprise the whole of Tropical and South Africa, Madagascar, Mauritius, Bourbon and the contiguous groups of islets, and the Cape Verde Islands—Madeira and the Canaries being regarded as a province of the Mediterranean subregion of the Northern region. Ascension, St. Helena, Tristan da Cunha, and Amsterdam and St. Paul Islands, though presenting some curious anomalies in their vegetation, may be regarded as appanages of the African region, or they might be left unattached to any primary region. Excepting the Compositæ, the affinities of the flora of St. Helena are distinctly African; and *Phylica nitida*, the only tree, or even shrub more than a trailer, in the other two groups of islands, is Mascarene †. Instead of arctic and temperate climates there are in this region tropical and temperate climates; yet botanically, as well as geographically, this is one of the most compact of the primary regions, and naturally divides into three subregions, namely:—Tropical Africa, South Africa, and Madagascar and adjacent islands. Eastern and Western tropical Asia should only be regarded as provinces of one Flora, as will presently be demonstrated.

Besides remote connections with the Northern, American, and Australasian regions, there is a very intimate connection of the African with the Indian region, traceable from the Cape up the eastern side of the continent to Abyssinia and by way of Socotra, Southern Arabia, Persia, and Afghanistan to the Panjab and Gangetic plain, and less distinctly southward into the Deccan peninsula, with a few extensions into the Malayan peninsula and archipelago; and notwithstanding the presence in the Madagascar subregion of such eminently Asiatic types as *Nepenthes*, *Lagerstræmia*, and a few others hitherto not found in continental Africa, it is evident that the interchange between Africa and Asia is far greater than between Madagascar and Asia, whether we consider tropical or temperate types. As might be expected, among the species common to India and Africa, those characteristic of a dry climate largely preponderate. On this

* See Journ. Linn. Soc., Bot. vi. p. 1, vii. p. 171, xiv. p. 141, and xxi. p. 392.

† For a full account of the botany of these islands, see Botany of the 'Challenger' Expedition, i. part 2, and Introduction.

point Dr. Schweinfurth and Dr. Bayley Balfour's botanical investigation of the island of Socotra furnishes conclusive data, collected by the latter *.

About one third of the species of flowering plants of Socotra are endemic; and a third are species belonging to tropical Africa and tropical Asia. Exclusive of species having a wider area, about eighty-five of the species of dicotyledons are common to Africa and Asia, though comparatively few of them penetrate India eastward of Scindh. The affinities of the entire Flora of Socotra are essentially tropical African and tropical Asian, but the African element predominates, and is mainly composed of the features of the Flora of the mountainous region of Abyssinia, with an infusion of West-African, South-African, and Madagascar types. Among South-African types are *Graderia*, *Babiana*, *Thamnosma*, *Lasiocorys*, and *Euryops*, of which the first two are not known to be represented in the intervening country. In this connection it may be mentioned that Dr. Aitchison discovered in Afghanistan the very distinct *Fingerhuthia*, a genus of grasses previously known only from South Africa. It was one of the most abundant grasses between Thal and Shinak in the lower Kurram valley, and presents no obvious characters to separate it specifically from *F. africana*, though Boissier has described it as a different species †.

As in the Madagascar flora, so in the Socotran, there are a very few isolated types whose nearest allies are in the New World. Balfour specially notices his new monotypic genera *Dirachma* (Geraniaceæ) and *Cœlocarpus* (Verbenaceæ) as belonging to this category. The three or four Turneraceæ in Madagascar, the arboreous *Mathurina* of the same order in Rodriguez, and *Ravenala madagascariensis* are other examples; yet this element is by no means so prominent in the flora as it would appear to be in the fauna, judging from Wallace's remarks thereon ‡.

To include the whole of tropical Africa in one subregion is unusual, but the facts seem to warrant this course, and the next division should be into several provinces. Interruptions in the continuity of the vegetation there are, and the forests of the eastern side of the continent are probably nowhere so rich as those of Guinea; but their composition is essentially the same. Taking the first volume of Oliver's 'Flora of Tropical Africa,' which is, of course, exceedingly fragmentary, it would appear that about one fifth of the species there enumerated are common to both sides of the continent; but subsequent investigations leave no doubt that the proportion is really much higher. Engler § has analyzed the composition of the flora of tropical Africa as far as published in the work cited, namely the Polypetalæ and the Gamopetalæ to the end of the Ebenaceæ; but the results can only be used in respect to the general relationships. The Leguminosæ rank first and the Compositæ next in regard to number of species.

* Proceedings of the Royal Institution of Great Britain, 1883, and Transactions of the Royal Society of Edinburgh, vol. xxxi.

† 'Flora Orientalis,' v. p. 569.

‡ 'Island Life,' p. 420.

§ Versuch, ii. p. 276.

Very small areas have, however, been thoroughly investigated botanically; hence we are far from knowing the extent and degree of richness of the flora.

From Engler's tabulation of Oliver's enumeration it appears that there is in W. Africa a larger proportion of endemic species, and fewer widely dispersed genera, than in E. Africa, and that there are about as many genera otherwise only represented in Madagascar and the neighbouring islands as there are in E. Africa. Further, W. Africa has more genera in common with tropical Asia than has E. Africa, which might be held as a sufficient ground for following Engler and others in regarding the tropics of the Old World as a primary region. Among Asiatic species discovered in Angola by Dr. Welwitsch was the remarkable *Naregamia alata* (Meliaceæ), previously only known from the Deccan peninsula of India. West Africa is relatively rich in genera otherwise restricted to America, though these are mostly represented by one or very few species. Many of them have seeds or fruits that float and bear long immersion in sea-water without injury, hence their presence in Africa may be due to oceanic currents; others may have been introduced with ballast. But after eliminating all these, there remain many remarkable connections between the two floras which are not so easily explained *.

Gustav Mann's botanical exploration of the temperate regions of the Cameroons Mountains in 1861 and 1862 resulted in some remarkable revelations published by Sir Joseph Hooker †. Nearly all the genera and half of the species are common to the mountains of Abyssinia, and one of the genera and many of the species are not found elsewhere. The number of European genera represented in this flora of fifty-six genera and 237 species found at elevations above 5000 feet is forty-five; thirty-eight of the genera and twenty-seven of the species are British. The South-African element is a small one, and consists almost wholly of species which also inhabit Abyssinia; it includes the genera *Anthospermum*, *Blæria*, *Ericinella*, *Peddiea*, and *Geissorhiza*.

Returning to Engler's summary, the much greater development of the Mediterranean forms is one of the most striking characteristics of the Flora of Eastern Africa, where they meet and intermingle with South-African types. More recently the mountains of eastern tropical Africa have been explored and the results given to the world ‡. Mr. Thomson's Kilima-njaro and other mountain collections, more particularly referred to here, consist of 140 species belonging to 107 genera, and add no fewer than nine northern genera to the equatorial-African Flora. Altogether they contain twenty-seven genera and thirty-seven species of a northern type; and the rest are almost exclusively South-African in character, some of the species being identical—*Calodendron capense*, *Clematis thunbergiana*, and *Alepidea amatymbica*, for example. In Angola

* See Engler, 'Versuch,' ii. pp. 176–179.

† Journal of the Linnean Society, Bot. vii. pp. 171–240.

‡ See Journ. Linn. Soc., Bot. xxi. pp. 392–406, and Trans. Linn. Soc. 2nd ser., Bot. ii. pp. 327–355, tt. 60–63, Sir Joseph Hooker and Professor Oliver.

such South-African types as *Faurea* (Proteaceæ), Selagineæ, Cyrtandreæ, Ericaceæ, *Mesembryanthemum*, and *Aloe* were encountered by Welwitsch *.

The Cape subregion must be dismissed with a reference to the latest essay on the composition and subdivision of its vegetation †.

The relationships of the Madagascar subregion to tropical and South Africa have been discussed mainly from data extracted from Mr. Baker's published contributions to this rich Flora ‡, and he has kindly permitted the use of some additional facts taken from his unpublished catalogue of the known flowering plants of the island. The number of species is about 3650, belonging to 1000 genera and 141 orders. This number represents probably less than half the flora of Madagascar; but it may be regarded as a fair sample, consisting partly of the upland or Cape element and partly of the low-land or tropical forest element. The twelve largest orders are:—

	Genera.	Species.		Genera.	Species.
§Leguminosæ	81	352	Acanthaceæ	25	117
§Compositæ	59	261	Gramineæ	45	110
Euphorbiaceæ	39	207	Urticaceæ	20	73
Orchideæ	38	169	Tiliaceæ	6	72
Rubiaceæ	56	138	Labiatæ	18	56
Cyperaceæ	22	129	Sterculiaceæ	10	55
			Totals	419	1739

Ten of these orders are among the first twelve in the Indian Flora, though occupying relatively very different positions, and the other two, Tiliaceæ and Sterculiaceæ (replacing Asclepiadeæ and Rosaceæ), are brought into this position by the very large number of species of *Grewia* and *Dombeya*. Eighteen orders are represented by only one species each, and thirty-five others by twenty species and upwards. Of the endemic order, Chlænaceæ, seven genera and twenty-two species have been defined. The Ternstrœmiaceæ afford an example of a widely spread order poorly represented both in Africa and Madagascar, whence only one species is recorded. Among characteristic South-African genera in Madagascar are *Ericinella*, *Philippia*, *Selago*, *Aloe*, *Aristea*, *Geissorhiza*, *Gladiolus*, *Faurea*, *Alectra*, *Harveya*, *Disa*, *Satyrium*, *Lasiosiphon*, *Phylica*, and *Anthospermum*. It is singular, too, that the solitary known Madagascar species of the genera *Viola*, *Geranium*, and *Drosera* occur in the mountains of tropical Africa, and the *Drosera* also in South Africa, though none is known to have a wider range. Sufficient evidence has perhaps been adduced to justify the course of treating the whole of tropical and South Africa and the Mascarene islands as a primary region, divisible into three subregions.

* "Sertum Angolense," Trans. Linn. Soc. xxvii.

† "A Sketch of the Flora of South Africa," by H. Bolus. A reprint from the 'Official Handbook to the Cape of Good Hope,' 1886.

‡ See Journ. Linn. Soc. xv., xvi., xviii., xx., and xxi., and Journ. Bot. 1881 (phytogeographical), 1882, 1884.

§ The same position as in the whole of tropical Africa.

Conspicuous among orders absent from the African region are the Cupuliferæ *, the characteristic order of trees of the northern region, and hardly less so of the mountains of tropical Asia (extending southward to New Guinea, though not south of the Ganges in Western India), and of the mountains of Mexico and Central America, extending nearly to the equator (*Quercus*), reappearing both in the American and Australasian regions in the extreme south (*Fagus*). Other notable orders or tribes unrepresented in the African region are:—Magnoliaceæ, Acerineæ (Maples), Pomaceæ, Hydrangeæ, Cornaceæ, Caprifoliaceæ, Vacciniaceæ, Rhodoraceæ (*Rhododendron*), and Abietineæ. There is also a very much smaller development of such essentially tropical orders as the Myrtaceæ, Aroideæ, and Palmæ than in either the Indian or the South-American region. On the other hand, the northern genus *Erica*, which covers thousands of square miles in Europe with very few species, is represented by hundreds of species in a comparatively small area in South Africa. Such anomalies occur in nearly all Floras: take the genera *Ranunculus*, *Epilobium*, and *Veronica* in New Zealand, for instance, where combined they constitute eight or nine per cent. of the flowering plants.

The Indian Region.

This, it is assumed, should include the whole of Wallace's "Oriental" zoological region and those portions of his Australasian region indicated in a previous paragraph (p. xxxvii), and Western Polynesia. Indeed the whole of Polynesia, except the Sandwich Islands, might be included. It is not intended to discuss the subdivision of this region, as the collection and examination of the data would involve great labour. New Guinea and some of the adjacent islands to the west, and those eastward to the Fiji group, constitute a distinct subprovince. Whether the remainder of the Malayan Archipelago should, with the Malayan Peninsula and Cochin China, all be included in one subprovince is not quite so certain. Some parts are exceedingly rich in endemic species and proportionately in genera, while others, the Philippines for example, are remarkably poor in endemic generic types, for only six genera in upwards of 1000 are endemic. It is here, too, that the highest proportion exists of monocotyledons to dicotyledons in any Flora of considerable extent of which there are available statistics, it being as 1 to 1·57 †. Further materials will probably modify these figures, though not perhaps to any great extent.

Miquel records some statistics ‡ of the Flora of the Malayan Archipelago, but as he took a much more restricted view of genera and species, especially of the latter, than the other authorities cited, they will only serve for approximate comparisons. The twelve natural orders most numerous in species are:—1, Leguminosæ, 676; 2, Orchideæ, 616;

* Even in the wide sense of Bentham and Hooker, for although the European *Alnus glutinosa* is now widely spread in South Africa, it is perhaps beyond doubt that it was introduced by man.

† R. A. Rolfe in Journ. Linn. Soc. xxi. p. 292.

‡ 'Flora Indiæ Bataviæ,' iii. p. 768.

3, Rubiaceæ, 594; 4, Urticaceæ, 448; 5, Gramineæ, 430; 6, Euphorbiaceæ, 265; 7, Acanthaceæ, 257; 8, Compositæ, 250; 9, Laurineæ, 234; 10, Palmæ, 234; 11, Melastomaceæ, 224; 12, Myrtaceæ, 215. The total number of phanerogams is set down as 9118 species; and the monocotyledons and dicotyledons are as 1 to 3·5. It should be added that Miquel's enumeration is very far from complete for many of the islands.

Sufficient particulars have been given of the botany of British India as a whole, and it is not intended attempting to characterize the subregions. It may be mentioned in passing, however, that Malayan types have penetrated to the flank of the Himalayas and traversed the Deccan peninsula to Ceylon. Thwaites, who enumerates upwards of 2600 phanerogams in Ceylon *, states that the hill Flora resembles very much that of the Neilgherries; in the humid south it is more akin to that of the Malay Archipelago, and in the dry north it is very nearly identical with that of the Coromandel coast.

The supposed special relationships between the Flora of the Deccan peninsula of India and those of Madagascar and tropical Africa alluded to by many writers, are probably not greater than those existing between the African region and Malaya.

The South-American Region.

The data brought together in the Appendix relative to the composition and the distribution of the Flora of Central America and Mexico † demonstrate very clearly that, apart from the peculiar Mexican element and the southward extensions of northern types, there are two other distinct elements, namely, the Andine and the Tropical, answering to the two subregions of the South-American region. Though only two subregions are recognizable, the development of the types characteristic of each of these subregions varies very much in different areas. Thus, Chili, considered as a province of the Andine subregion, has Californian connections, and wants some of the most characteristic and universal of South-American types, while others attain their maximum development in this province. These peculiarities are chiefly due to the varying amounts of heat and moisture in different districts. Similar conditions produce similar results in some districts east of the Andes. How far many of the characteristic types are generally spread in the South-American region, and within

* 'Enumeratio Plantarum Zeylaniæ.'

† Polakowsky, H., "Die Pflanzenwelt von Costa Rica" (16 Jahresb., Ver. Erdk. Dresden, 1879, pp. 26–124, mit einer pflanzengeogr. Karte), Just. Bot. Jahresb. viii. (1880), 2, pp. 502–506. In this paper, previously overlooked, the author gives a sketch of the composition and physiognomies of the vegetation, and brings together all the data afforded by his own collections and professedly those of Œrsted, Warscewicz, Wagner, Scherzer, Wendland, and Hoffmann. He tabulates the number of species of the natural orders, and his totals are:—Monocotyledons 209, Dicotyledons 748=957, or 129 less than our total (Vol. IV. p. 218). But the total is made up in a very different way. Thus, Polakowsky enumerates 127 Compositæ against our 100, and only 57 Orchideæ against our 210.

what limits others are restricted, may be gathered from the various tables and paragraphs in the Appendix, more especially from those paragraphs on the distribution of the more prominent natural orders (vol. iv. pp. 235 to 282), and from the analysis of a sample of the mountain vegetation (p. 298); but it may be of interest to illustrate this further by a few examples, selecting such groups as are spread over the tropical, or subtropical, and temperate parts of the country.

Foremost among the types not extending into Chili are the Melastomaceæ; but their absence can hardly be explained by climatal conditions alone. The large genus *Cuphea*, which ranges from the south-eastern states of North America to Uruguay and Chili, is represented in the last country by only one species (*C. spicata*), which covers nearly the whole area of the genus. *Fuchsia* extends from Mexico to Magellan's Straits, is represented in San Domingo by two species, and by three or four species in Brazil, and it reappears in New Zealand. The Turneraceæ are essentially temperate and subtropical plants of the western side of the continent, yet there are a few species in Brazil and Buenos Ayres. The specially characteristic Cactaceæ are spread all over South America and the West Indies, though they do not inhabit all districts. Their northern extensions are given in detail in the fourth volume, page 247. The Bromeliaceæ are spread all over South and Central America and the West Indies, and penetrate the south-eastern states of North America. The more tropical Cyclanthaceæ, Marcgraviaceæ, Vochysiaceæ, and Myrtaceæ-Lecythideæ are mainly eastern South American, though they are also represented in Central America; and the distribution of such genera as *Tropæolum*, *Baccharis*, *Coccoloba*, *Lacistema*, *Roupala*, *Lisianthus*, *Hyptis*, *Philodendron*, *Anthurium*, *Brassia*, *Dichæa*, *Epidendrum*, *Oncidium*, and many others proves that we have to deal with one large primary region. Epiphytal orchids generally are local, or occupy relatively small geographical areas, yet many of the American species have a considerable range. A list of thirty Mexican species with their distribution is given in the fourth volume of this work (p. 270), and it may be added here that about eighty of the Mexican species extend to the West Indies, and upwards of 100 to South America, many of the species being the same in the three areas, as is apparent from the fact that 800 out of 938 are endemic in Mexico. So far as the distribution is known, a larger number of the Mexican species reach Brazil than Peru. Approximately the numbers are:—Colombia (New Granada and Ecuador) seventy-five species; Peru twenty-two; Guiana forty-five; and Brazil thirty-six *.

Wallace divides his neotropical zoological region, which corresponds to our South-American region, into four subregions, namely a Mexican, an Antillean, a Brazilian,

* In the discussion on the northern limits of epiphytal orchids in Mexico (vol. iv. p. 269) the improbability of *Meiracyllium gemma* and *Odontoglossum madrense* being North Mexican was advanced, though in consequence of the habitat being given as Sierra Madre they were so recorded. It appears, however (Veitch, Odontoglossum, p. 51), that they were found in the neighbourhood of Colima, in about 19° N. lat., and far from the Sierra Madre, in Durango, where Seemann collected.

and a Chilian. From what has preceded it is evident that such a division would not satisfactorily indicate the leading features of the distribution of plants, as there are only two distinct elements, the andine and tropical, both represented at different altitudes in several of the provinces. A better botanical division is an Andean subregion (which merges into the North Mexican and Californian to the north and into the Antarctic in the south) and a Tropical subregion, both divisible into several provinces. In conclusion, reference may be made to a statistical account of the Andine Flora of Ecuador *, and to Mr. Ball's recent work †, in which he suggests that the ancient mountains of Brazil formed a great centre of development of plant life.

The Australasian Region.

This includes the whole of Australia and the adjacent islands, which may be subdivided into a south-western and a north-eastern subregion; and New Caledonia and New Zealand, which constitute other subregions. The remote connections with the American Andine flora are reviewed in the Appendix (vol. iv. p. 234), and in the description further on of the Antarctic Flora. Reasons for including New Caledonia and New Zealand in this region are given in the discussion of Drude's botanical and Wallace's zoological divisions of this part of the world ‡. It may be of interest to add here a few statistics of the vegetation of two or three definite areas of the Australasian region.

Tasmania. (After Mueller §.)

	Orders.	Genera.	Species.
Dicotyledones	72	257	662
Monocotyledones	15	99	272
Gymnospermeæ	1	7	11
	88	363	945

Extratropical South Australia. (After R. Tate ‖.)

	Orders.	Genera.	Species.
Dicotyledones	78	365	1244
Monocotyledones	16	113	322
Gymnospermeæ	2	2	3
	96	480	1569

* Dressel, L., Charakteristik des eucadorianischen Pflanzenschatzes: Natur und Offenbarung, xxvii., 1881. Abstract in Just's Bot. Jahresb. x. 1882, pp. 435–441, including a table of the number of species of each natural order. Cultivated or introduced plants appear to be counted with the others, as he has one Resedaceæ.

† 'Notes of a Naturalist in South America' (1887), Chapter vi.

‡ See pp. xxxi and xxxvii.

§ Census of the Plants of Tasmania.

‖ Transactions of the Philosophical Society of Adelaide, 1880.

New Zealand. (After Engler *.)

	Orders.	Genera.	Species.
Dicotyledones	74	207	697
Monocotyledones	12	94	241
Gymnospermeæ	1	5	17
	87	306	955

The smallness of the numbers of genera and species strikes one most, especially on comparison with those for the whole of Australia or with those of other areas. That this is not altogether attributable to insularity is clear from the richness of the Flora of New Caledonia, computed at 3000 species of phanerogams †. Japan, of similar extent, and lying in about the same latitudinal position in the north that New Zealand occupies in the south, shelters nearly a hundred more genera of flowering plants than there are species in New Zealand, and about three times as many species.

Flora of the Sandwich Islands.

Wallace treats this as a subregion of his Australian region; Drude regards it as a part of his Indian region; while Engler makes it a province of his 'Palæotropical Floral Kingdom.' Considering the complexity of the affinities of the flora and its extent, and the fact that no element largely predominates over the others, it seems desirable to leave it unattached, without, however, giving it the rank of a primary region. Could Engler's 'Ancient Oceanic Floral Kingdom' (which includes the Antarctic forest region of South America, the Southern Island of New Zealand and outlying islets, extratropical Australia, the Cape, Kerguelen, Amsterdam, Tristan da Cunha, St. Helena, and Ascension Islands) be regarded as a satisfactory solution of a difficult problem, the Sandwich Islands should be referred to this rather than to the Indian region; but the basis of such an arrangement is altogether too hypothetical from our standpoint, and it brings together the most diverse Floras. As Hillebrand remarks ‡, the Sandwich Islands are the only Polynesian group which contain a large number of indigenous plants of American affinities. In a previous paragraph (p. xxxix) examples are given of the more striking genera or species of the different elements of this highly interesting Flora; and Engler's tabular view of the Flora and its affinities affords much fuller information § on this point. Engler's enumeration contains 669 species of vascular plants, of which he estimates 500, or 74·6 per cent., to be endemic. The recently published 'Flora,' cited below, of the late Dr. W. Hillebrand, who spent twenty years in the islands, has increased this number by nearly 200 species, nearly all of them endemic. His summary is here reproduced.

* Versuch, &c. ii. p. 84.

† Brongniart, in Ann. Sc. Nat. 5^{me} série, 1865, p. 187.

‡ Flora of the Hawaiian Islands, Introduction, p. xxix.

§ Versuch, ii. pp. 104–131.

Summary of the Flora of the Sandwich Islands. (After Hillebrand.)

	Species.				
	Of aboriginal introduction.	Of recent introduction.	Endemic.	Original.	Total.
Dicotyledones	13	92	500	584	689
Monocotyledones	11	23	74	121	155
Phanerogamia	**24**	**115**	**574**	**705**	**844**
Cryptogamia Vasculares	0	0	79	155	155
Totals	**24**	**115**	**653**	**860**	**999**

The 860 species of vascular plants regarded as indigenous belong to 265 genera, being as 3·25 to 1, or about half that in large continental areas such as Mexico, Australia, and British India. Notwithstanding this low average number of species to a genus, the most striking feature in the flora is the large number of species of many of the endemic genera. Thus, *Schiedea* (Caryophyllaceæ), 17; *Kadua* (Rubiaceæ), 13; *Clermontia* (Campanulaceæ), 11; *Cyanea* (Campanulaceæ), 28; and *Stenogyne* (Labiatæ), 17. Further the Polynesian genera *Pelea* (Rutaceæ) and *Phyllostegia* (Labiatæ) are represented by 20 and 16 species respectively, and *Cyrtandra* by 29 species *. Of the indigenous species 81·4 per cent. are endemic—a proportion exceeded in no other Flora of the same extent, perhaps, except that of West Australia, in which it is 85 per cent. Ninety-five orders of Phanerogamia are represented; and the proportion of Monocotyledones to Dicotyledones is as 1 to 4·8, or higher than might have been expected; but the former consist largely of Glumiferæ, petaloid monocots being rare, and orchids are represented by only three terrestrial genera, and one endemic species of each genus.

The question arises whether any of the other islands or groups of islands in the Pacific can appropriately be associated with the Sandwich Islands. The connection with the other Pacific islands beyond the sea-coast and Australian elements is so very slight that the Sandwich Islands stand almost completely isolated. Nadeaud † describes a plant from Tahiti which he refers to *Phyllostegia*, otherwise exclusively belonging to the Sandwich Islands; *Sclerotheca arborea* (Campanulaceæ), also a native of the Society Islands, is said to be more nearly related to the American genus *Siphocampylus* than it is to the endemic genera of the Sandwich Islands‡; *Fitchia*, the only genus of Compo-

* Thirty-two according to Clarke's monograph, overlooked by Hillebrand.

† Enumération des Plantes Indigène de l'Ile de Tahiti, p. 56.

‡ Bentham and Hooker, Gen. Pl. ii. p. 548.

sitæ peculiar to the Society Islands, is related to the Sandwich Islands genera only in the sense of belonging to the same tribe (Helianthoideæ), which is eminently American; *Pelea* is represented in the Navigators Islands. These are practically all the outside affinities with the peculiar element of the Sandwich Islands flora. The smaller islands possess no endemic plants; and even the Marquesas are almost destitute of an endemic element *; and the vegetation of all the other groups of islands of Eastern Polynesia is much more largely Malayan in character. Nadeaud includes nineteen species of orchids in his enumeration of the plants of Tahiti, amongst them half a dozen epiphytal species of the genera *Bolbophyllum* and *Dendrobium*. Seventy-nine orders of Phanerogamia are represented by about 500 species collectively; but the fragmentary character of the Flora may be estimated from the fact that thirty-three of the orders are represented by only one species each. Taking all the facts into consideration, the remainder of Polynesia may be included in the Indian region.

The Fragmentary Antarctic Flora.

We retain the designation "Antarctic," first employed by Forster and adopted by Hooker †, for the coldest southern Flora, although it is not geographically an admissible term. There can be little doubt that the present scattered and isolated fragments, forming the fringe of the southern limits of phanerogamic vegetation, constitute the remnant of a Flora formerly covering a more extensive area, probably in a higher latitude. The surviving portion is poor, but from its uniform composition it is probably of remote origin ‡. Northern species are associated with such as now exist only in the south, and the same species occur in the scattered fragments of vegetation all round the hemisphere. It includes the Auckland, Campbell, and Macquarie Islands, Macdonald (Heard), Kerguelen, Crozets, and Prince Edward Islands, South Georgia and the Falkland Islands, Fuegia (Tierra del Fuego) and a small portion of South-western Patagonia. It is true that the vegetation of the Auckland group and Campbell Island is essentially New Zealand in character and relatively rich, while that of the Falkland Islands is almost wholly Fuegian; yet there is a stronger common element than was apparent when Sir Joseph Hooker wrote his 'Flora Antarctica.' In the fourth volume page 234, are tabulated the more striking connections between the Australasian and Antarctic Floras and that of the mountains of Mexico; and in the Botany of the 'Challenger' Expedition is summarized all that was known of the Botany of the Antarctic Region, and the relationships of the Australian and American Floras §. Since

* See Jardin and Jouan in Mém. Soc. Sc. Nat. Cherbourg, iv. 1856 and xi. 1865.

† Flora Antarctica, 1844–47.

‡ In a recent communication from Dr. H. P. Guppy he suggests that the vegetation of these remote islands is due to the agency of birds. Admitting the probability of such a thing, it must have happened very long ago, and not altogether in the direction indicated by him, or how is the endemic element to be accounted for? See 'Nature,' xxxviii. p. 40.

§ Introduction, pp. 50–65, and pt. 2, pp. 133–281.

this was done the Germans have botanically explored South Georgia *, where thirteen species of flowering plants were collected, nine of which are common to the eastern part of the Antarctic Flora, from Kerguelen to the islands south of New Zealand; four of them reach New Zealand itself, and one (*Colobanthus subulatus*) the Alps of Australia.

In Fuegia the beech-woods (consisting mainly of the deciduous-leaved *Fagus antarctica* and the evergreen *F. betuloides*) are a conspicuous feature; but all the islands are absolutely treeless, except the Auckland group, where there is an arboreous Myrtacea (*Metrosideros lucida*) and two or three other large shrubs or small trees. But the beech element in the southern hemisphere is one of the most interesting, and it is very fully described by Hooker †. In the northern hemisphere *Fagus sylvatica* inhabits Europe, Asia Minor, Northern Persia, and Japan, but is not known to occur in the intervening country; and the eastern North-American *F. ferruginea* is exceedingly near it, so near, indeed, as to be regarded by some botanists as a variety. Besides these there is a Japanese species recently described by Maximowicz ‡, which strongly resembles *F. sylvatica* in foliage, though it is very different in the fruit. Japan, Northern Persia, North Italy, and Florida are the southern limits of the genus *Fagus* in the northern hemisphere, where it is represented by at most three species. In the southern hemisphere, on the other hand, there are at least a dozen distinct species divided between South America, New Zealand, Tasmania, and the mountains of Victoria and N. S. Wales, with a maximum development in New Zealand and extra-tropical South-west America. In continental Australia the genus is represented by two isolated outlying endemic species, one occurring at the head of the Macleay river in about 31° of latitude, and the other on the Yarra-Yarra in about 37° 30′; and in America *F. obliqua* inhabits the Andes in as low a latitude as 33°. Between these stations and the northern ones indicated above there is no living trace of the genus §. The foregoing particulars concerning these two widely separated northern and southern races of *Fagus* are given as another illustration of the intimate relationships existing between the northern and southern Floras, because the genus is so distinct and sharply defined that there can be no question about the generic identity of the two races, and because *Fagus* is the only genus of the characteristic northern Cupuliferæ that reaches high southern latitudes. *Quercus* reaches New Guinea in the east, and Popayan (about 2° 30′ N. lat.) in America. The allied Salicineæ (*Populus* and *Salix*) also do not reach

* See Engler, Jahrbücher, vii. p. 281, and 'Nature,' xxxiv. p. 106.

† Flora Antarctica, p. 345.

‡ Mélanges Biologiques, xii. p. 542.

§ *Fagus argentea* and *F. javanica*, enumerated in Steudel's 'Nomenclator Botanicus,' attributed to Blume and recorded from Java, were probably manuscript names given by Blume to some sterile specimens of *Castanopsis*. He himself does not mention them in his 'Cupuliferæ Javanicæ,' nor does Miquel in his 'Flora Indiæ Batavæ,' and it is almost absolutely certain that no species of *Fagus* exists in Java.

cold southern latitudes, though one species of *Salix* is a native of South Africa, and another species extends about as far south as the northern limit of *Fagus* in the Andes, and further south in eastern S. America.

Let us now briefly examine the composition of the very poor insular portion of the Antarctic Flora, excluding the Falkland, Campbell, and Auckland Islands. The islands or groups of islands more or less explored botanically are South Georgia, Marion (Prince Edward group), the Crozets, Kerguelen, Heard (Macdonald group), and Macquarie, lying between 38° W. and 160° E. longitude.

The accompanying table demonstrates the existence of an antarctic phanerogamic element all round the southern hemisphere. It will be perceived that the only island possessing endemic plants is Kerguelen, and these may possibly yet be discovered in the Crozets or Prince Edward Island, just as *Pringlea antiscorbutica* has been. Two genera,

Flora of the Antarctic Islands from South Georgia in the west to Macquarie Island in the east.

Name.	Distribution in the islands.						Distribution beyond the islands.								Distribution of the genera.
	South Georgia.	Marion.	Crozets.	Kerguelen.	Heard.	Macquarie.	Andes.	Fuegia.	Falklands.	Auckland.	Campbell.	N. Zealand.	Australia.	N. Hemisphere.	
RANUNCULACEÆ.															
Ranunculus acaulis	..	..	..	..	..	*	..	..	..	*	..	*	..	..	Wide.
—— biternatus	*	*	..	*	..	..	..	*	*						
—— trullifolius.....	..	..	..	*	..	..	..	*	*						
—— moseleyi	..	..	..	*											
CRUCIFERÆ.															
Pringlea antiscorbutica ..	..	*	*	*	*										
CARYOPHYLLEÆ.															
Colobanthus muscoides ..	..	..	..	..	..	*	..	..	..	*	*	..	..	..	Andes and Australasia.
—— kerguelensis	..	..	..	*											
—— subulatus	*	..	..	..	..	..	..	*	..	..	*	*	*		
—— crassifolius	*	..	..	..	..	..	..	*	*						
Lyallia kerguelensis	..	..	..	*											
PORTULACEÆ.															
Montia fontana	*	*	..	*	..	..	*	*	..	*	*	*	*	*	Wide.
ROSACEÆ.															
Acæna buchanani	..	..	..	..	..	*	..	..	..	..	..	*	..	..	Andes, Polynesia, and Australasia.
—— adscendens	*	*	*	*	..	*	..	*	*	..	..	*			
—— lævigata.....	*	..	..	..	..	..	*	*	*						
Carried forward	6	4	2	8	1	4	2	7	5	3	3	5	2	1	

Flora of the Antarctic Islands, &c. (*continued*).

Name.	Distribution in the islands.						Distribution beyond the islands.								Distribution of the genera.
	South Georgia.	Marion.	Crozets.	Kerguelen.	Heard.	Macquarie.	Andes.	Fuegia.	Falklands.	Auckland.	Campbell.	N. Zealand.	Australia.	N. Hemisphere.	
Brought forward	6	4	2	8	1	4	2	7	5	3	3	5	2	1	
CRASSULACEÆ.															
Tillæa moschata	..	*	..	*	..	..	..	*	*	*	*	*	..	..	Wide.
—— sinclairii	..	..	..	..	..	*	..	..	..	..	..	*			
HALORAGEÆ.															
Callitriche verna.....	*	*	..	*	*	..	*	*	*	*	*	*	*	*	Wide.
UMBELLIFERÆ.															
Azorella selago	..	*	*	*	*	*	..	*	..	..	..	..	..	..	Australia, Andes.
—— lycopodioides.....	..	..	..	..	..	*	..	*	*						
ARALIACEÆ.															
Stilbocarpa polaris	..	..	..	..	..	*	..	..	..	*	*	*			
RUBIACEÆ.															
Coprosma repens	..	..	..	..	..	*	..	..	..	*	*	*	..	..	Polynesia, Australasia, Juan Fernandez.
Galium antarcticum	..	..	*	*	..	..	..	*	*	..	..	..	..	..	Wide.
COMPOSITÆ.															
Pleurophyllum criniferum	..	..	..	..	..	*	..	..	..	*	*				
Cotula plumosa	..	..	*	*	..	*	..	..	..	*	*	..	..	..	Wide.
SCROPHULARINEÆ.															
Limosella aquatica.....	..	..	..	*	..	..	*	*	*	..	..	*	*	*	Wide.
JUNCACEÆ.															
Juncus scheuchzerioides ..	..	..	..	*	..	..	*	*	*	*	*	*	..	..	Wide.
—— novæ-zealandiæ....	*	..	..	..	..	..	..	..	..	..	..	*			
Luzula crinita.....	..	..	..	..	..	*	..	..	..	*	*	..	..	..	Wide.
—— campestris.....	..	..	..	..	..	*	*	*	..	..	..	*	*	*	
Rostkovia magellanica ..	*	..	..	..	..	..	*	*	*	..	*	..	..	..	Fuegia, Auckland and Kermadec Islands.
CYPERACEÆ.															
Uncinia compacta	..	..	..	*	..	..	..	..	..	..	..	*	*	..	Andes to W. Indies, Sandwich Islands, Australasia.
GRAMINEÆ.															
Poa cookii	..	*	..	*	*	..	..	..	..	..	..	..	..	..	Wide.
—— foliosa	..	..	..	..	..	*	..	..	..	*	*	*			
—— flabellata	*	..	..	..	..	..	..	*	*						
Festuca erecta	*	..	..	*	..	..	..	*	*	..	..	..	..	..	Wide.
—— duriuscula.....	..	..	..	..	..	*	*	*	..	..	..	*	*	*	
—— kerguelensis	..	..	..	*											
Phleum alpinum	*	..	..	..	..	..	*	*	..	..	..	..	..	*	Wide.
Aira antarctica	*	..	..	*	..	..	..	*	*	..	..	*	..	..	Wide.
Agrostis magellanica	..	..	..	*	..	..	..	*	*	..	*	..	..	..	Wide.
Totals: 24 gen., 40 sp.	13	8	5	21	4	15	9	22	16	12	14	18	7	6	

Pringlea and *Lyallia*, are confined to the islands under consideration; two, *Pleurophyllum* and *Stilbocarpa*, do not extend beyond the New-Zealand region; six are represented only in the American and the Australasian regions; fourteen are of wide, mostly of almost universal, distribution, and six of the species are of nearly equally wide range. The monotypic *Pringlea antiscorbutica* has no near ally in the southern hemisphere, but it is closely related to the northern genus *Cochlearia*, differing more in habit of growth than in floral structure. And *Lyallia* is of the same affinity as the Andine *Pycnophyllum* and the Mexican *Cerdia*.

As already stated, the Tristan da Cunha group and Amsterdam and St. Paul Islands can hardly be included in the antarctic region, unless we make it more extensive in New Zealand and in South America, because the bulk of the vegetation consists of *Phylica nitida* and *Spartina arundinacea*, types of a warmer region; the former, the only tree or even shrub larger than the trailing *Empetrum*, being a Mascarene species, and the latter a tall reed, whose nearest ally is a native of eastern temperate South America. Not one of the plants enumerated in the foregoing table is recorded from the Tristan da Cunha group, and only two, *Ranunculus biternatus* and *Uncinia compacta*, inhabit Amsterdam or St. Paul Island. On the other hand, several of the plants found in the Tristan and Amsterdam groups are common to New Zealand and South America. Of the twenty-nine flowering plants known to inhabit the Tristan group sixteen are apparently endemic; three are South-American and are not represented eastward, while six extend eastward, three reaching New Zealand. Nineteen flowering plants are recorded from St. Paul and Amsterdam, eight of which have not been found elsewhere, and the distribution of the remainder is similar to that of the Tristan da Cunha non-endemic element. Numerically as to species, then, the composition of the Tristan and Amsterdam Floras is that of the cold temperate region and very similar to that of the islands farther south; but several of these species are quite rare, and the conspicuous vegetation, apart from ferns, is almost wholly *Phylica* and *Spartina*, at least in the Tristan da Cunha group and Amsterdam Island.

CONCLUDING REMARKS.

The facts brought together in the preceding pages and in the 'Appendix'* have an interest apart from any conclusions arrived at, and whether the views therein put forward on the botanical regions of the world meet with acceptance or not, it will be generally conceded that although the broad features of the distribution of plants and animals are essentially the same, they are by no means identical.

When it is considered how much more potent and diversified are the means of

* It may be well to repeat that this is a review of the results of comparatively recent investigations rather than an attempt at an exhaustive discussion of the subject.

dispersal of plants than are those of animals, the divergences in distribution are no greater than might be expected.

Beyond this, many natural orders most widely separated from each other in floral structure repeat the same modifications of their vegetative organs under similar circumstances, and possess equal capabilities for adaptation to external conditions.

The present distribution of orders, genera, and species, and all that is known of the past, seems to point to one original centre of creation and development, and to such physical conditions at different periods as permitted, or even favoured, the general spread of all the principal types of plants and the wide migrations of many of the same forms or species. Assuming this to have been so, any system of regional division is arbitrary, and only useful in proportion to its agreement with the present distribution of plants, inasmuch as it is merely a foundation on which to build a knowledge of botanical geography, not a representation or classification of the facts. An examination of the extensions and isolated remains of extensions of the types characteristic of each region throws more light on the subject than can otherwise be obtained.

Professor Huxley seems to have been so convinced of this in the Animal Kingdom that he even goes so far as to say that he thinks it would not be difficult to show that the whole surface of the globe should be primarily divided into a northern and a southern region in order to display best the geographical distribution of Birds and Mammals*. And he further remarks, in connection with his proposed four primary zoological regions† (1, Arctogæa; 2, Austro-Columbia; 3, Australasia; 4, New Zealand), that the three latter are in some respects less unlike one another than they are unlike the first. The same might be said of the plant-regions, taking tropical and South Africa and the Indian region out of Huxley's Arctogæa.

Even the most highly specialized Floras exhibit merely a local development of species, of genera, or groups of genera, belonging to orders of universal dispersion, often differing more strikingly in their vegetative organs (roots, stems, and leaves) than in their reproductive organs (flowers and fruits) from the usual character of the order. The nature of the medium in which plants grow, combined with the climatal conditions, determine the character the development assumes, and similar phenomena in development are repeated in widely-sundered areas, where the prevailing physical conditions are the same or similar. Familiar examples of this kind of parallelism are offered by the Cactaceæ of Mexico and certain African species of the genus *Euphorbia*, some of which so strongly resemble the branching *Cerei*, some the spheroidal *Melocacti*, as to deceive any but the most experienced eye. Such American genera as *Yucca*, *Agave*, and *Dasylirion* are replaced in Africa by *Aloe*, and in Australia by *Xanthorrhœa*. Some of the species of a genus develop tuberous roots, like many of the Australian Sundews, and some thick fleshy stems, as South-African species of *Pelargonium* and *Vitis*, thus adapting themselves to

* Proc. Zool. Soc. Lond. 1868, p. 313.

† See *antè*, p. xxxiv.

local conditions. Some of the species of a genus having normally flat leaves are remarkable for their great likeness to a cypress, a lycopod, or a *Salicornia*. Development in this direction is exemplified in some of the New-Zealand species of *Veronica*.

Another remarkable illustration of the almost universal dispersion of northern types is offered by the composition of the bulk of the vegetation of the central desert-region of Australia, where the Chenopodiaceæ number upwards of a hundred species, including thirty of *Atriplex*, fifteen of *Kochia*, twelve of *Chenopodium*, and seven of *Salicornia*, and associated with these are the European *Suæda maritima* and *Salsola kali*, and several endemic genera, mostly of one or very few species, except *Rhagodia* (12 species), which differs chiefly from *Chenopodium* in having a fleshy fruit.

It has been shown (pp. xix–xxii) how few natural orders are unrepresented in any one of the large areas under consideration; and ninety-five or nearly half of the natural orders are represented in the Sandwich Islands. So far as we know, the African region is poorer than either the South-American or the Indian region, but further explorations may reveal the existence of several of the natural orders hitherto undiscovered. Those of relatively restricted areas are almost all small, and consist of one or few genera and few species, as may be seen on referring to the table on page xi; and most of them are more definitely characterized than some of the larger, generally-dispersed orders. Indeed, it is the absence, through destruction, dying out, or some other cause, of connecting links, that gives some at least of these small groups the status of natural orders.

Turning to the groups intermediate in rank between orders and genera, a considerable number of which are regarded by some botanists as distinct natural orders, we can better appreciate and estimate the amount of differentiation in development in different areas. As an illustration, a few of the more important in the thalamifloral Polypetalæ are noted. The Fouquierieæ, Fremontieæ, Limnantheæ, Clusieæ, Rhizoboleæ, Marcgravieæ, Malpighieæ, Gaudichaudieæ, Cusparieæ, and Luxembergieæ are examples of distinct tribes or suborders restricted to America; and the Dillenieæ, Dombeyeæ, Aurantieæ, and Phytocreneæ are peculiar to the Old World. On the other hand, the Zanthoxyleæ is one out of many tribes that are generally spread in warm countries. The Lardizabaleæ are divided between Peru and Chili and Eastern Asia, from North India to Japan; the Hermannieæ are African, with three or four representatives in Mexico, and the Colletieæ are Andine and Australasian.

Similar illustrations of the distribution of plants might be indefinitely multiplied. It is clear, as Sir Joseph Hooker suggests, that a classification of plants by Linnæus or Jussieu would have been essentially the same had it been based entirely upon Chinese, Australian, South-American, or Mexican instead of mainly upon European plants.

Whether the plants (and animals) of the earth had a common northern origin, as supposed by some writers, and the highly differentiated southern forms are descendants of northern ancestors which have undergone their great differentiation in the south, are

problems difficult of solution. As regards a very large number of northern types, they can be distinctly traced southward. Many exist only in isolated localities, as they have been driven out by climatal conditions, while others present a nearly continuous chain; but, speaking generally, they gradually decrease in volume from north to south. The theory that the Proteaceæ, Eucalypti, and other southern types inhabited Europe in early Tertiary times is far from being established on satisfactory data, and all the indisputable evidence points to a northward migration of these types and a southern origin. If it can be proved that the prototypes of *Eucalyptus*, Proteaceæ, &c. existed in Europe, and that the northern outliers of these types are survivals of stragglers of the southward migration, it follows that differentiation equal to the greatest differentiation in the whole world took place in the northern hemisphere, and that there has been comparatively little beyond specific differentiation in the southern. This may be so, and the extraordinary development of the genera *Erica*, *Mesembryanthemum*, and *Pelargonium* in South Africa and of *Ranunculus*, *Epilobium*, and *Veronica* in New Zealand might be cited in support of the argument.

In conclusion, a few additional remarks on the adoption of a few large primary regions. With regard to treating the north temperate and arctic countries as one primary region, it may be contended that, although there is a large number of genera common to Europe and western North America, to give an extreme illustration*, there is also a larger number not represented in the two countries, including genera numerous in species, such as *Medicago*, *Cousinia*, and *Acantholimon* on the one hand, and *Dalea*, *Gilia*, and *Pentstemon* on the other. This is true; but are the differences greater than between Ceylon and Borneo or between the latter and New Guinea, or between South-west Australia and South-east Australia? Among the numerous genera peculiar to West Australia are such prominent ones as *Kingia*, *Dasypogon*, *Anigozanthos*, *Conostylis*, *Andersonia*, *Dryandra*, *Pileanthus*, *Verticordia*, *Tremandra*, *Platytheca*, and *Chorilæna*. Among those common to the two are *Eucalyptus*, *Persoonia*, *Hakea*, *Grevillea*, *Dampiera*, *Leschenaultia*, *Myoporineæ*, and *Xanthorrhœa*. Further, upwards of eighty per cent. of the species of vascular plants are endemic. The absence of a large number of orders and suborders represented in Eastern Australia is also remarkable, and on a par with the poverty of the European Flora as contrasted with the Chino-Japanese or the North-American. Nevertheless few persons would refer these two areas to different primary botanical regions†.

* As already urged, it is a comparison of the vegetation of Eastern Asia and Eastern North America that reveals the most striking similarities; the affinities between these two regions being much stronger than those existing between the vegetation of Europe and Eastern Asia.

† Sir Joseph Hooker sufficiently indicates in his essay on the Australian Flora the striking characteristics of, and the more striking diversities between, the vegetation of Eastern and Western Australia; but Dr. Engler's tabular view and partial analysis of the Flora of the whole of Australia (Versuch, ii. pp. 12–54) brings out these peculiarities much more prominently.

It is usual to rank the South-African Flora as a primary region, but here it is made a subregion of a region comprising tropical and South Africa and the Mascarene Islands, because the mountain flora of Madagascar and of tropical Africa, especially eastern, is largely composed of South-African types, a fact that is in a manner suppressed in treating them as separate regions. The same arguments apply with regard to South America.

In a cartographical representation of the floras of the World it seems at first easy enough to indicate the centres and extensions, or isolated mountain-areas, of each, but the practical difficulties are insurmountable. Yet it would not be difficult to show, on so many maps of the world, the areas and extensions into other regions of the five regions proposed. There would also be space for indicating the density and limits of some of the leading types. This should not be done, however, in the sense of denominating a vast area as the "province of the tea-tree," the "province of the cedar," and so on, which conveys an altogether false impression; yet unfortunately this method has been continued in the latest Atlas of Plant Distribution.

Sir Joseph Hooker, who has kindly read the proof-sheets of the foregoing pages and suggested many improvements, and who has consented to write a brief commentary on this 'Introduction,' does not share some of the opinions expressed by the writer, who himself might modify them for a primary botanical division of the world based on climatal conditions alone. To a great extent the facts speak for themselves, yet it is doubtful whether any two persons would deal with them in exactly the same manner.

It is perhaps unnecessary to apologize for the occasional repetition of a fact or an argument, or for slight discrepancies in the figures cited in different places, as all persons engaged or interested in similar work can appreciate the difficulties of the task, and will excuse imperfections of such a nature.

A COMMENTARY

ON

Mr. HEMSLEY'S INTRODUCTION AND APPENDIX

TO THE

BOTANICAL PART OF THE 'BIOLOGIA CENTRALI-AMERICANA.'

By Sir J. D. HOOKER, Late Director of the Royal Gardens, Kew.

Having been deeply interested in the progress of Mr. Hemsley's work on the Botanical portion of the 'Biologia Centrali-Americana,' and especially in that author's elaboration of the important Appendix relating to Botanical Geography, which is contained in the fourth volume, I have been requested by Messrs. Salvin and Godman to contribute to the pages of their 'Biologia' some observations of my own relating to the scope and character of the work accomplished by Mr. Hemsley, especially as regards its value as advancing knowledge of the geographical distribution of plants.

At the same time, I have been asked to add, to any comments of my own upon the contents of the Appendix, my conceptions of the principles which should guide the botanical geographer in the limitation of the primary botanical regions of the globe—conceptions which have been tardily matured, during botanical visits to many countries and a long familiarity with the dominant features of their Floras, obtained both on the spot and from a study of large herbaria.

No country of equal area presents a richer or more varied vegetation than Mexico. Except perhaps the Javan and Indian, no tropical Flora of great extent is so well explored and so fully represented by collections; and none has been subjected to so searching an analysis, in respect of the correlation of its botanical features and the definition of its botanical regions, as has this Flora under Mr. Hemsley's judicious, painstaking, and accurate methods of study. My view of the merit and completeness of this part of the work urged me to suggest to the authors of the 'Biologia' the desira-

bility of Mr. Hemsley's instituting a closer comparison between the Mexican Flora and that of some tropical region in the Old World presenting as rich and varied a vegetation, and I indicated the British-Indian Flora as especially suitable, both on this account, and because the 'Flora of British India' was sufficiently advanced in respect of available published and unpublished materials to supply accurate data for such a comparison. And further it appeared to me that by availing himself, together with these materials, of the geographical data appended to every genus of phanerogamic plants contained in the recently-concluded 'Genera Plantarum,' Mr. Hemsley might very greatly advance that most instructive branch of phytogeography which originated independently and coincidently in the minds of Humboldt and Brown, and to which the former gave the name of Arithmeticæ botanices.

Messrs. Godman and Salvin cordially responded to my suggestion, and I feel sure that the results embodied in the "Statistics of the Phanerogamic Flora of the World" (Introduction, pp. ix–lxi) will be received with gratitude by all botanists as a very valuable supplement to a work that owes its existence to those naturalists' travels, collections, learned labours, and munificence.

The tables at p. xv and following of the Introduction are particularly valuable, and give information previously unattainable. The areas compared are approximately within the same latitudes, 9° N. and 33° N., but separated by nearly 180° of longitude, the Asiatic in 70° to 95° E., the American 80° to 115° W. Each presents a hot, moist tropical, a temperate, and a frigid climate. It is impossible to find, in the Old and New Worlds respectively, two areas more similar as to physical features, or in which the vegetation of their respective continents is more fully represented; and yet the comparison of their Floras shows that, with an almost total diversity of species, genera, and of many natural orders, the proportion of monocotyledonous to dicotyledonous plants is nearly the same in each; that the number of natural orders is only 12 fewer in Mexico; that the number of species in each differs by only 2000 (11,626 in Mexico, 13,647 in India); that the average number of genera in each order is nearly the same in each (11 in Mexico and 13 in India); that the average number of species in each genus even more nearly coincides (6·4 in Mexico and 6·0 in India); and, more singular still, that the percentage of endemic species in each differs by only 2 per cent.

It is instructive to observe that these marked resemblances in proportions do not arise out of a resemblance in the elements from which they are derived; for, turning to the natural orders that contribute largest to the Flora of each area, they are very differently represented as to number of species in each. Compositæ, which take the first place in the Flora of the globe and of Mexico, are reduced to the sixth place in India. Leguminosæ, which are second to Compositæ alone, are second in both Mexico and India; but Orchideæ, which hold the third place in the world and in Mexico, are first in India; Rubiaceæ, the fourth in the world, are the seventh in Mexico and fifth in India; grasses are fifth in the world and in Mexico, but only third in India.

Descending in the systematic scale to the lowest term of the series, the differences between the elements of the two Floras become greater and greater, until genera are reached; thus, as Mr. Hemsley shows, only 25 to 26 per cent. of these are common to the two regions. As yet data do not suffice to ascertain the exact number of species common to India and Mexico, but it may not exceed 600 of the 25,273 which is approximately the sum of the species of both Floras.

It is not my purpose to discuss the nature or origin of the unexpected likenesses and expected unlikenesses that Mr. Hemsley has shown to exist between the Floras of Mexico and India: of these the former are due to causes which have influenced vegetation as a whole; the latter to more or less local causes. As an illustration of what I mean, I would say that the conditions which have resulted in monocotyledons maintaining their numerical position of one to four or thereabouts of dicotyledons in the globe and in all large areas thereof are, in the present state of science, inscrutable; but that the comparatively low number of Compositæ in India is explicable by the intrusion into India of the Malayan Flora, which is abnormally deficient in Compositæ. Not that this offers any real solution of this latter phenomenon, which lies much deeper. It must be shown whether the intrusive Malayan Flora found in India a Flora already deficient in Compositæ, or whether it prevailed over and displaced the pre-existing native Compositæ; and it must also be shown why the Malayan Flora is deficient in this ubiquitously dominant element of all other floras, whether tropical, temperate, or frigid, insular or continental, humid or arid.

It would be very interesting to know whether any of the larger divisions of the animal kingdom present phenomena comparable with those derived from large remote botanical areas. It may be supposed that the great unconformity that exists between the geographical regions of plants and those of animals, as traced out by the most competent of zoologists, and which unconformity is so strongly, and as I think rightly, insisted upon by Mr. Hemsley, is opposed to such a parallelism existing; but I do not see the force of this objection if, as I think, the problems presented by these "Arithmetics" are deeper than those of regional distribution.

Another point of resemblance between the Floras of Mexico and India is that each is botanically as well as geographically a *nœud*. The lofty mountains in each are continuations from more temperate latitudes in the north, favouring an immigration of temperate species which have retained their characters in the higher elevations and become modified or been extinguished in the lower. In each Rosaceæ, oaks, and Coniferæ of northern forms descend into the tropics, even to 3000 feet elevation, whilst palms ascend to 8000; and in each epiphytic orchids abound, ascending in cool temperate regions to 8000 feet and upwards.

Perhaps the most striking case of parallelism in the Floras of tropical America and Asia, as prominently put forward by Mr. Hemsley, is that in each so many temperate types, especially oaks and *Pinus* proper, are continued far into the tropics, but cease at

or near the equator. If, as has with much probability been surmised, the existing types of vegetation originated in northern latitudes and by migration southwards, and by differentiation and dispersion, peopled the southern hemisphere, there is no obvious obstacle to the prolongation of these two particular types (and many others) into South America, New Guinea, and Australia. But there is this difference between the oaks of the tropics of the Old World and those of the New, that the Asiatic in their prolongation southward to Malacca and thence eastward to Borneo in descending to the sea-level assume different types of structure from their northern allies, forming distinctly tropical sections of the genus, as *Cyclobalanus*, *Chlamidobalanus*, *Lepidobalanus*, and *Castanopsis*. On the other hand, the tropical-American oaks where they descend to the sea-level do not assume a character sectionally differing from temperate-American species. It is startling to have to regard the genus *Quercus* as tropical rather than temperate; but so it is, and especially in India, where about 70 species are purely tropical and only 12 purely temperate.

Turning now to the concluding pages of Mr. Hemsley's Introduction (pp. xxxix–lxi), which are devoted to an exposition of the primary botanical regions of the globe, I find that these regions are based upon far more complete and reliable data than had previously been available. In the last paragraph but one Mr. Hemsley remarks that I do not share some of the opinions which he has expressed in his previous pages. This remark must not be taken as conveying the impression that I dispute either his facts or methods. I shall now, in preference to discussing either, give in outline my own idea of the principal botanical regions of the globe, from which it will be seen how far I differ from him in the limitation of the primary Floras of the globe.

I limit the primary botanical regions of the globe to two, the Tropical and the Temperate; these are distinguished by both climatic and botanical features—tropical-country plants will not, as a rule, bear a temperate climate, nor temperate-country plants a tropical climate. Botanically the two regions are distinguished by the restriction of certain natural orders to one or the other, and the prevalence of others in one or the other. The geographical limit between these Floras in either hemisphere varies with every few degrees of longitude, being affected by elevation of surface and local climatal conditions. I do not distinguish the northern and southern Frigid Floras as primary regions separate from the Temperate, for these regions contain no genera and very few species different from the Temperate, and the geographical limits of any group of species that may be selected as inhabiting the coldest region of the globe are undefinable by latitude or by isothermal or isotheral lines.

If a distinctive name is desirable for the two primary regions, I would suggest that of Botanical Empires.

The regions next in importance to the two primary are in my view seven,—two north temperate, of the Eastern or Old and Western or New World respectively; two tropical, corresponding to the above; and three south temperate (America, Africa, and

Australia). If the term Empire is applicable to the primary divisions, that of Kingdoms may be accepted for the secondary. I have a few observations to offer upon these seven kingdoms:—

I. *The north temperate Kingdom of the Old World.*—This coincides with the Palæarctic zoological region of Dr. Sclater, with the exception that it includes Greenland, the Flora of which, as I have elsewhere shown, is more European than American. In detail of circumscription it, with this exception, follows exactly the sinuous course traced for it by Wallace in the third chapter of 'Island Life.'

In attaching greater importance than do Mr. Hemsley and other botanists to the difference between north temperate Floras of the Old and New Worlds, I am influenced by a somewhat close study of the elements of each, together with impressions gathered from journeys in both continents. I am aware that such impressions are often quite untrustworthy, and must be so if not supported by adequate data derived from a comparison and contrast of the plants constituting the Floras of the two areas.

The chief arguments for the uniting these kingdoms into one are the prevalence of coniferous and cupuliferous and other trees of the same genera in both, that a considerable number of other genera are common to both, and that the Floras of their higher latitudes are practically one. But it would not be difficult to give examples of similar tropical features which prevail over the continents of the Old and New Worlds, and which might with much reason be adduced in favour of uniting them into one region, reinforced as the argument would be by the great number of genera (more by far than is usually supposed) that are common to the tropics of the Old and New Worlds. Having regard to the composition of the Flora of the two northern temperate regions, if the Floras of their middle and southern temperate latitudes are taken into account, the botanical differences between them appear to me far to outweigh the resemblances. Of the forest-trees scarcely one is conspecific with an Old-World one. Of the 10,000 (or thereabouts) known temperate North-American flowering plants not more than 700 are common to Europe, and these include upwards of 150 water and marsh plants of more or less mundane distribution; and there are nearly fifty natural orders in temperate America that are wanting in Europe. Again, taking Boissier's 'Flora Orientalis' as a standard of comparison with that of temperate North America, I find that of 1100 oriental genera less than 400 are American, and of about 9500 species less than 350 are American. In Gray's 'Flora of the Eastern United States,' of nearly 2300 species not 370 are European. In Coulter's 'Flora of the Rocky-Mountain Region,' out of about 1800 species about 300 alone are European, and of the Californian Flora of 2700 species there are not 230 European.

But these statistical data, important as they are, are far less so than what is supplied by the genera and species themselves. The generic, tribal, and specific differences between the Liliaceæ, Labiatæ, Scrophularineæ, Umbelliferæ, Onagraceæ, Leguminosæ,

and Malvaceæ of America and Europe are no less striking than is the comparative rarity in the former country of Cruciferæ, Caryophylleæ, Geraniaceæ, Carduaceæ, Campanulaceæ, Lobeliaceæ, Primulaceæ, and Orchideæ, and the prevalence of Vitaceæ, Anacardiaceæ, Cratægi, Asclepiadeæ, Polemoniaceæ, Nyctagineæ, and Cyperaceæ.

Turning now to the Floras of the Asiatic and American continents, it is difficult to say which is the most striking phenomenon, the wonderful identity of certain isolated genera and species of the eastern shores and islands of the Old World with those of the eastern side of the New World (and which has been so admirably worked out and explained by Asa Gray), or the total dissimilarity of the Asiatic and American temperate Floras in other respects. I may select the Japan group in illustration of both phenomena, because geographically it is perfectly well suited for a comparison with the Pacific-coast Flora of America, and because it is the head-quarters in Asia of the representative genera and species of the Eastern American Flora. The Japanese Flora contains about 200 species common to North America, but nearly three fourths of these are species found all round the globe in the north temperate regions; the remainder are chiefly the Eastern American genera and species alluded to above. Of the North-American Flora proper there is not a trace in Japan; there is not one of its multitude (nearly 150) of peculiar genera to be found in Japan of Cruciferæ, Capparideæ, Papaveraceæ, Rosaceæ, Saxifrageæ, Onagraceæ, Compositæ, Polemoniaceæ, Hydrophyllaceæ, Scrophularineæ, Nyctagineæ, Polygoneæ, and Liliaceæ, nor are there any endemic representatives of them. Further, the numerical proportions of the Japanese orders are European and Asiatic, not American. Leguminosæ, of which there are only 19 genera in California, is represented by 41 in Japan; though the total number of phanerogamous genera is 879 in California and only 839 in Japan. Of Orchideæ there are only 10 genera and 22 species in California against 34 genera and 67 species in Japan*, and the contrast might be carried much further by taking many other natural families. In short, the differences between the Palæarctic and Nearctic botanical areas are so many and various that I have no hesitation in regarding them as two botanical kingdoms.

II. *The tropical Kingdoms of the Old and New World.*—An analysis of the Floras of the Old and New World as a whole shows, as was to be anticipated, that the Old World Flora is by far the richest; it contains probably 6000 known genera of Flowering Plants, and the New World nearly 4000, there being only about 1200 genera common to both. It is a singular fact that the ratios of Monocotyledons to Dicotyledons is the same for the endemic genera of the Old World (1·48), for the endemic genera of the New World (1·46), and for the genera common to both (1·47). How far this holds

* The Californian genera of Orchids are, with one exception, European, and most of them Asiatic, which renders the absence of so many in Japan very anomalous.

good for the species I have not attempted to ascertain, nor have I attempted the separation of the tropical genera of either world for the totals above given.

I regard the tropical African Flora as a subdivision of that of the Old World, because I find no other essential difference between the Asiatic and African vegetations taken as wholes than the poverty of the latter, and because the peculiar botanical features of large tracts of Asia are repeated in Africa. Thus the Punjab, Scinde, and S. Persian Flora is largely represented all over north tropical Africa, extending to the Cape de Verde Islands; the notable absence in the Deccan peninsula of India of Cupuliferæ and the extreme rarity of Coniferæ are conspicuous characters of all tropical Africa; and the Indo-Malayan Flora has its representatives in Madagascar, and measurably on the coasts of the African mainland. If any part of the tropical Old World could be separated as a primary region that should rank as a kingdom, it would be New Guinea.

III. *The three Southern temperate regions* (*Extratropical America, Africa, and Australia*).—I cannot accept the merging the South-African Flora into the tropical African. Of the six well-defined botanical provinces of South Africa so ably established and limited by Mr. Bolus, not one is represented anywhere in tropical Africa, where there is no region of heaths, of Compositæ, of Crassulaceæ, of Campanulaceæ, of Proteaceæ, and of Restiaceæ, and where such few representative species of these orders as do occur are either confined to mountain-regions or are isolated amongst the prevalent Indian types of vegetation. On the other hand, the genuinely tropical types of Africa are few and scattered in its south temperate regions, where the Anonaceæ, Menispermaceæ, Guttiferæ, Rubiaceæ, Acanthaceæ, &c. are hardly even represented, and only locally. It is true that Mr. Bolus designates the western seaboard of South Africa as the tropical region, mainly because a palm there extends to 33° 30′ lat. south; but as in New Zealand, the Himalayas, and at Gibraltar palms enter the middle temperate zone, their presence does not necessarily imply a tropical heat; and as the plants of the so-called tropical South-African region require no greater heat than that of an English conservatory, I cannot regard them as typical of a tropical Flora.

In the above sketch I have taken no account of exceptional Floras like those of St. Helena and the Sandwich Islands, whose relationships must be determined by a study of the flowering plants they contain. Nor have I taken into account theoretical considerations of any kind.

With regard to exact geographical limitations of any of these seven botanical areas, such are possible only where geographical features present insuperable obstacles to the further spread of the plants that characterize them. Where two are conterminous, there is always a neutral ground, often a very broad one, and this neutral ground may itself present a Flora which may be regarded as either tropical or temperate.

BIOLOGIA CENTRALI-AMERICANA.

BOTANICA.

PHANEROGAMIA.

DICOTYLEDONES.

POLYPETALÆ.

Series I. THALAMIFLORÆ.

Order I. RANUNCULACEÆ.

Ranunculaceæ, Benth. et Hook. Gen. Plant. i. p. 1.

Genera thirty, species about 540, dispersed over the whole world, but within the tropics almost confined to the mountains. With the exception of the genus *Clematis*, all the members of this order are herbaceous.

Tribe CLEMATIDEÆ.

1. CLEMATIS.

Clematis, Linn. Gen. Plant. n. 696; Benth. et Hook. Gen. Plant. i. p. 3.

About 100 species, dispersed over nearly all temperate regions, a few occurring in the tropics. Chiefly woody climbers.

1. **Clematis acapulcensis,** Hook. et Arn. Bot. Beech. Voy. p. 410.

SOUTH MEXICO (*Parkinson*), Acapulco (*Sinclair, Beechey*). Hb. Kew.

2. **Clematis americana,** Mill. Dict. n. 14; DC. Prodr. i. p. 5.

SOUTH MEXICO, Campeche (*Houston, Shakespear*).—EQUATORIAL AMERICA. Hb. Mus. Brit.

Grisebach (Fl. Brit. W. Ind. p. 1) refers both of these to *C. dioica*, L.

3. **Clematis caripensis,** H. B. K. Nov. Gen. et Sp. v. p. 36.

Clematis caracasana, DC.

SOUTH MEXICO, in thickets near Jalapa and below San Salvador, on the road leading to Jalapa (*Schiede*), Yucatan and Tabasco (*Johnson*, 89); NICARAGUA, Chontales (*Tate*); PANAMA, Volcan of Chiriqui, Veraguas (*Seemann*).—COLOMBIA; TRINIDAD. Hb. Kew.

4. **Clematis dioica,** Linn. Amœn. v. p. 398; Sloane, Hist. Jam. i. p. 199, t. 128. fig. 1.

South Mexico, region of Orizaba (*Bourgeau*, 3280), Zimapan (*Coulter*), 639, Acapulco (*Lay & Collie*).—Brazil, States of Colombia, and the West Indies. Hb. Kew.

Seemann (Bot. Voy. 'Herald,' p. 267) refers *C. caripensis*, H. B. K., and *C. sericea*, H. B. K., hither.

5. **Clematis drummondii,** Torr. & Gray, Fl. N. Am. i. p. 9.

Clematis caudata, Hook.

Texas and New Mexico.—North Mexico, Chihuahua (*Potts*), Monterey, Nuevo Leon (*Platz*), Tamaulipas (*Berlandier*), Sonora Alta (*Coulter*, 634 and 637), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 2). Hb. Kew.

Dr. Seemann refers *C. nervata* to this species.

6. **Clematis filifera,** Benth. Pl. Hartw. p. 285.

South Mexico, near Leon (*Hartweg*), Zimapan (*Coulter*, 642). Hb. Kew.

Var. **incisa,** Hemsl., foliorum segmentis ultimis trifidis vel trisectis.

Region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 1).

Dr. Seemann unites this with *C. reticulata*, Walt.

7. **Clematis flammulastrum,** Griseb. Pl. Wright. Cub. p. 153.

South Mexico, ruins of Uxmal, Yucatan (*Schott*, 711).—Cuba. Hb. Mus. Brit.

8. **Clematis grahami,** Benth. Pl. Hartw. p. 5; Flore des Serres, t. 376.

South Mexico (*Graham*, 1830). Hb. Kew.

In Hb. Kew. is the following note respecting this species in Mr. Bentham's handwriting:—"A *C. caripensi* non nisi foliis pubescentibus differt."

9. **Clematis grossa,** Benth. Pl. Hartw. p. 33.

South Mexico, San Bartolo in the Barranca (*Hartweg*, 266), Zimapan (*Coulter*, 636), Orizaba (*Bilimek*), Mexico (*Parkinson*). Hb. Kew.

This may be a variety of *C. sericea.*

10. **Clematis mociniana,** Don, Gen. Syst. i. p. 5.

Mexico.

11. **Clematis nervata,** Benth. Pl. Hartw. p. 5.

North Mexico, Zacatecas (*Coulter*); South Mexico, Aguas Calientes (*Hartweg*, 2), Zimapan (*Coulter*), Cordillera of Oaxaca (*Galeotti*). Hb. Kew.

12. **Clematis polycephala,** Bert. Fl. Guat. p. 24.

Guatemala, Volcan de Agua (*Velasquez*).

13. **Clematis pauciflora,** Nutt. in Torr. & Gray, Fl. N. Am. i. p. 9.

California and New Mexico to—North Mexico, Sonora (Fl. California).

14. **Clematis pubescens,** Benth. Pl. Hartw. p. 5.
SOUTH MEXICO, Guanaxuato (*Hartweg*, 3). Hb. Kew.

15. **Clematis reticulata,** Walt. Car. p. 156. (*C. pitcheri*, Torr. & Gray.)
ARKANSAS and TEXAS to—NORTH MEXICO, valley of the Cibolo, Chihuahua (*Bigelow*).

16. **Clematis sericea,** H. B. K. Nov. Gen. et Sp. v. p. 37.
SOUTH MEXICO, valley of Cordova and region of Orizaba (*Bourgeau*, 1586), Vera Cruz (*Galeotti*, 4569), Tenancingo, Toluca, 6000 feet (*Heller*); GUATEMALA, San José (*S. Hayes*, 453); NICARAGUA, Chontales (*Seemann*).—WEST INDIES, PERU, and COLOMBIA. Hb. Kew.

17. **Clematis,** sp. (aff. *C. grahami*, Benth.).
GUATEMALA, in hedges (*Bernoulli*, 162, *Skinner*). Hb. Kew.

18. **Clematis,** sp.
NORTH MEXICO, Monterey, Nuevo Leon (*Edwards and Eaton*). Hb. Kew.

19. **Clematis,** n. sp.?
SOUTH MEXICO, Vera Cruz to Orizaba (*F. Müller*), Mirador, Vera Cruz (*Linden*, 965). Hb. Kew.

20. **Clematis,** sp. (an *C. sericeæ* var.?).
GUATEMALA, Llano near Dueñas, common (*Salvin & Godman*, 264). Hb. Kew.

Tribe ANEMONEÆ.

2. THALICTRUM.

Thalictrum, Linn. Gen. Plant. n. 697; Benth. et Hook. Gen. Plant. i. p. 4.

About fifty species, perennial herbs, natives of the temperate and frigid zones of the northern hemisphere, a few growing in the mountains of Tropical India, South Africa, and the Andes of South America.

1. **Thalictrum densiflorum,** H. B. K. Nov. Gen. et Sp. v. p. 39, t. 426.
SOUTH MEXICO, near Moran, 8000 feet (*Humboldt & Bonpland*).

2. **Thalictrum fendleri,** Engelm. in Pl. Fendl. p. 5.
NEW MEXICO and CALIFORNIA to—NORTH MEXICO, Sierra del Pajarito, Sonora (*Schott*). Hb. Kew.

3. **Thalictrum hernandezii,** Tausch in Presl, Reliq. Hænk. ii. p. 69.
SOUTH MEXICO, on the western side (*Hænke*), Toluca, 8200 feet (*Heller*).

4. **Thalictrum lanatum,** Lecoyer, in Bull. Soc. Bot. Belg. xvi. p. 226.
SOUTH MEXICO, Cordillera of Talea, Oaxaca, 3000 feet (*Galeotti*, 4575).

5. **Thalictrum longistylum,** DC. Syst. i. p. 171; Deless. Ic. Sel. i. t. 7?
SOUTH MEXICO, Chiapas (*Ghiesbreght*), Oaxaca (*Ghiesbreght*), Orizaba (*Bourgeau*, 2726),—and southward to PERU. Hb. Kew.

6. **Thalictrum mexicanum,** DC. Syst. i. p. 187.
MEXICO (*Hernandez*).

7. **Thalictrum peltatum,** DC. Prod. i. p. 11.
MEXICO (*De Bergher*, 3).

8. **Thalictrum pubigerum,** Benth. Pl. Hartw. p. 285.
SOUTH MEXICO, on the banks of rivers, Lagos (*Hartweg*, 1591). Hb. Kew.

9. **Thalictrum rutidocarpum,** DC. Syst. i. p. 172.
SOUTH MEXICO (*Sallé*, *Graham*), Orizaba (*Botteri*, 824).—Mountains of TROPICAL SOUTH AMERICA. Hb. Kew.

10. **Thalictrum strigillosum,** Hemsley, Diag. Pl. Nov. pars 1, p. 1.

Caule ramisque plus minusve strigillosis, foliolis graciliter petiolulatis subtus hispidis supra sparse puberulis, floribus longe pedicellatis, antheris insigniter aristatis, stylo pubescente longissime exserto, achæniis fere sessilibus rugis elevatis reticulatis notatis.

Herba 2–3-pedalis, ramosa, strigilloso-hispida. *Radix* subcarnosa, fibrosa. *Caulis* sulcato-striatus, strigillosus vel demum fere glaber. *Folia* (radicalia non vidi) petiolata, subquadri-ternatim divisa, foliolis petiolulatis, cordato-rotundatis vel basi cuneatis, apice 3–5-lobatis, ad 8–12 lineas latis, præcipue subtus secus nervos hispidis. *Flores* longe pedicellati, pedicellis basi bracteis parvis munitis; sepala glabra, ovato-oblonga, ad 3 lin. longa; stamina calycem superantia, filamentis capillaceis, antheris aristatis filamentis æquilongis. *Achenia* circiter 7, sessilia vel brevissime stipitata, oblique lunata, 2–3 lin. longa, insigniter costato-reticulata.

SOUTH MEXICO, rare in ravines among bushes (*Schaffner*), Tizapan, valley of Mexico (*Bourgeau*, 276), Zimapan (*Coulter*, 652), mountains around Mitla, Oaxaca (*Andrieux*, 546), between San Miguel and La Joya (*Schiede*). Hb. Kew.

This differs from its allies *T. rutidocarpum*, *longistylum*, &c. in being more or less clothed with hispid hairs, which on the stem are long and on the leaves short, and in the leaflets, anthers, and achenes. Perhaps it will eventually be found necessary to unite several of these forms as one variable species.

11. **Thalictrum wrightii,** A. Gray, Pl. Wright. ii. p. 7.
NORTH MEXICO, mountain ravine at Santa Cruz, Sonora (*Wright*). Hb. Kew.

12. **Thalictrum,** sp.
SOUTH MEXICO, between Chalco and Gonacatepec (*Andrieux*, 545). Hb. Kew.

13. **Thalictrum,** sp.
SOUTH MEXICO, between San Miguel and La Joya (*Schiede*). Hb. Kew.

14. **Thalictrum,** sp.

SOUTH MEXICO, Vera Cruz (*Galeotti*, 4541 and 4549, *Linden*, 963). Hb. Kew.

"Very near *T. peltatum*, DC., but leaflets not peltate."—*Bentham* in Hb. Kew.

15. **Thalictrum,** sp. (foliolis amplis latis).

SOUTH MEXICO, Oaxaca (*Ghiesbreght*). Hb. Paris.

3. ANEMONE.

Anemone, Linn. Gen. Plant. n. 694; Benth. et Hook. Gen. Plant. i. p. 4.

About seventy species, chiefly in the temperate and cold regions of the northern hemisphere, a few scattered in the mountainous regions of Central and South America; three occur in South Africa, and one in Australia.

1. **Anemone caroliniana,** Walt. Carol. p. 157; Marcy's Exploration of the Red River, t. 1.

Anemone tenella, Pursh.

NORTH AMERICA, from North Carolina through the south-eastern States to—NORTH MEXICO, Chihuahua (*Torrey*).

2. **Anemone mexicana,** H. B. K. Nov. Gen. et Sp. v. p. 41.

NORTH AMERICA, Illinois, Louisiana, and Texas to—SOUTH MEXICO, near Santa Rosa (*Humboldt & Bonpland*), Oaxaca (*Galeotti*), Zimapan (*Coulter*, 654), Orizaba (*Botteri*, 21), Vera Cruz (*Linden*, 964). Hb. Kew.

4. MYOSURUS.

Myosurus, Linn. Gen. Plant. n. 394; Benth. et Hook. Gen. Plant. i. p. 5.

Two species, both annual herbs. *M. minimus* is widely dispersed in the temperate parts of the northern hemisphere, and also occurs in South America and Australia. Probably introduced in some of the localities. *M. aristatus* grows in Western Extra-tropical America, both North and South, and also in New Zealand, and is likely to occur in Mexico.

1. **Myosurus minimus,** Linn. Sp. Pl. 407; Gray, Gen. Ill. t. 8.

Temperate regions of the northern hemisphere, AUSTRALIA and SOUTH AMERICA; NORTH AMERICA southward to—NORTH MEXICO, Chihuahua (*Bigelow*), Sonora (*Schott*). Hb. Kew.

Tribe RANUNCULEÆ.

5. RANUNCULUS.

Ranunculus, Linn. Gen. Plant. n. 699; Benth. et Hook. Gen. Plant. i. p. 5.

Annual and perennial herbs; about 160 species dispersed over nearly all temperate

and frigid regions, including the mountains within the tropics; but especially abundant in the northern hemisphere.

1. **Ranunculus amarillo,** Bert. Fl. Guat. p. 24.

GUATEMALA (*Velasquez*).

2. **Ranunculus aschenbornianus,** Schauer, in Linnæa, xx. p. 719.

SOUTH MEXICO, mountains about Tula (*Aschenborn*, 489).

3. **Ranunculus cymbalaria,** Pursh, Fl. Am. Sept. ii. p. 392; DC. Syst. i. p. 252.

CANADA to the ARGENTINE REPUBLIC.—NORTH MEXICO, region of San Luis Potosi, 6000 to 7000 feet (*Parry & Palmer*, 3); SOUTH MEXICO, Zimapan (*Coulter*, 651), marshy pastures near the city of Mexico (*Bourgeau*, 2).—Also in NORTHERN ASIA and EUROPE. Hb. Kew.

4. **Ranunculus delphinifolius,** H. B. K. Nov. Gen. et Sp. v. p. 48.

SOUTH MEXICO, wet pastures, Morelia (*Hartweg*, 267), Real del Monte (*Coulter*, 648), Zimapan (*Coulter*, 650), Santa Fé (*Bourgeau*, 284), Toluca (*Heller*), Mexico (*Graham*, 114 and 115). Hb. Kew.

5. **Ranunculus dichotomus,** Moç. et Sessé, in DC. Syst. Veg. i. p. 288; Calques des Dess. Fl. Mex. 1.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 5); SOUTH MEXICO, in wet grassy places near Jalapa (*Schiede*), between San Miguel del Soldado and La Joya (*Schiede*), Oaxaca (*Galeotti*, 4568), Real del Monte (*Coulter*, 647), Tacubaya, valley of Mexico (*Bourgeau*, 1), Mexico (*Harris*).—COLOMBIA; PERU. Hb. Kew.

6. **Ranunculus donianus,** Pritzel, in Walp. Rep. ii. 740.

Ranunculus humilis, D. Don, in G. Don's Gen. Syst. i. p. 34, nec Collie in Hook. Bot. Beechey's Voy.

MEXICO (Hb. Lambert).

7. **Ranunculus geoides,** H. B. K. Nov. Gen. et Sp. v. p. 47, t. 429.

SOUTH MEXICO, peak of Orizaba, 9000 to 12,000 feet (*Linden*, 960); near Moran and Real del Monte (*Humboldt & Bonpland*). Hb. Kew.

8. **Ranunculus hookeri,** Schl. in Linnæa, ix. p. 610.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 6); SOUTH MEXICO, Oaxaca (*Galeotti*, 4567), Orizaba, abundant (*Bourgeau*, 2414), Vera Cruz to Orizaba (*Müller*), Zimapan and Real del Monte (*Coulter*, 645 and 648), in grassy places near Jalapa (*Schiede*). Hb. Kew.

9. **Ranunculus hydrocharis,** Spenner, Fl. Frib. iv. p. 1007 (*R. longirostris*, Godr., = *R. aquatilis*, Linn., var.).

SOUTH MEXICO, Rio de Actopan (*Schiede*), canal of Santa Anita, near Mexico, and road from Pueblo Viejo to Real del Monte. Hb. Paris.

This appears to be the only form of the Batrachian *Ranunculi* collected in Mexico.

10. **Ranunculus hydrocharoides,** A. Gray, Pl. Thurb. p. 306.
North Mexico, wet meadows, Mabibi, Sonora (*Thurber*, 441). Hb. Kew.

11. **Ranunculus llaveanus,** Schl. in Linnæa, x. p. 233.
South Mexico, in grassy places about Jalapa (*Schiede*).
This should perhaps be referred to *R. delphinifolius*, H. B. K.

12. **Ranunculus "microcarpus,** Presl?"
South Mexico, near Yotla (*Andrieux*, 547). Hb. Kew.

13. **Ranunculus multicaulis,** D. Don in G. Don's Gen. Syst. i. p. 34.
Mexico. Hb. Lambert.

14. **Ranunculus oxynotus,** A. Gray, in Proc. Am. Acad. x. p. 68.
California.—North Mexico, Sonora Pass.

15. **Ranunculus ornithorrhynchus,** Hook. Fl. Bor.-Am. p. 21, t. 9.
South Mexico, Toluca, 8200 to 9000 feet (*Heller*). Hb. Kew.
Probably the same as *R. dichotomus*, DC. The typical plant is a native of Oregon.

16. **Ranunculus pennsylvanicus,** Linn. fil. Suppl. p. 272.
Ranunculus hispidus, Michx.
Canada southward to—North Mexico. Hb. Kew.

17. **Ranunculus petiolaris,** H. B. K. Nov. Gen. et Sp. v. p. 45, t. 428.
South Mexico, near Santa Rosa, 8400 feet (*Humboldt & Bonpland*).

18. **Ranunculus peruvianus,** Pers. Ench. ii. 103; Hook. Ic. viii. t. 745.
South Mexico, Peak of Orizaba, 12,000 to 12,500 feet (*Linden*, 961).—Colombia; Peru. Hb. Kew.

19. **Ranunculus sibbaldioides,** H. B. K. Nov. Gen. et Sp. v. p. 48.
South Mexico, margin of the crater-lake of Toluca, 12,000 feet (*Galeotti*, 4560); meadows about Toluca (*Heller*).—Mountains of Tropical South America. Hb. Kew.

20. **Ranunculus stolonifer,** Hemsley, Diag. Pl. Nov. pars alt. p. 17.

Pusillus glaber stolonifer, foliis subintegris radicalibus longe petiolatis, floribus parvis, toro conico, petalis circiter 6 oblongis longe unguiculatis, unguis apice nectario amplo producto, acheniis lævibus subrotundis compressis.

Herba perennis, stolonifera, tota glaberrima, caulibus erectis, 2–6-pollicaribus vel vix evolutis. *Folia* integra vel interdum calloso-crenata; radicalia longe petiolata reniformia rotundata elliptica usque lanceolato-oblonga, lamina 3–12 lin. longa, petiolo 1–2-pollicari basi scarioso-dilatato; caulina sessilia, linearia. *Flores* parvi, flavi, longiuscule pedunculati; torus conicus, glaber, sepala oblongo-elliptica, 1–1½ lin. longa; petala 5–6, oblongo-elliptica, subtrivenia, circiter 1¼ lin. longa, longe unguiculata, unguis apice nectario conspicuo producto; stamina

numerosa, petalis longiora, filamentis dilatatis. *Achenia* circiter 20, lævia, subrotunda, valde compressa leviter carinata.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 4). Hb. Kew.

This apparently undescribed species of *Ranunculus* is allied to *R. ophioglossifolius*, *pusillus*, &c., but differs in habit, torus, achenes, &c., and in the petals having a relatively longer claw.

21. **Ranunculus trachyspermus,** Engelm. and Gray, Pl. Lindh. i. p. 3.

Texas.—North Mexico, Sonora (*Schott*). Hb. Kew.

22. **Ranunculus tridentatus,** H. B. K. Nov. Gen. et Sp. v. p. 42.

South Mexico, ditches, Comancipilla (*Hartweg*), Mexico (*Graham*, *Berlandier*, 452). Hb. Kew.

Var. β. Near Carpio at Lake San Cristobal (*Humboldt & Bonpland*).

Colombia; Peru.

23. **Ranunculus,** sp.

South Mexico, valley of Mexico, Desierto Viejo (*Bourgeau*, 759). Hb. Kew.

24. **Ranunculus,** sp. (**? R. repentis,** var.).

Guatemala, Volcan de Fuego (*Salvin*). Hb. Kew.

Tribe HELLEBOREÆ.

6. AQUILEGIA.

Aquilegia, Linn. Gen. Plant. n. 684; Benth. et Hook. Gen. Plant. i. p. 8.

Perrennial herbs. A large number of forms have been described as species; but Bentham and Hooker (*l. c.*) think they should be reduced five or six species. Baker, in Gard. Chron. 1878, defines twenty-seven species. They are distributed all round the temperate zone of the northern hemisphere.

1. **Aquilegia chrysantha,** A. Gray, in Gard. Chron. 1873, p. 1335.

Aquilegia leptoceras, var. *flava,* A. Gray, Pl. Wright. ii. p. 9.
Aquilegia leptoceras, var. *chrysantha,* Hook. f. Bot. Mag. t. 6073.

Rocky Mountains to—North Mexico, banks of rivers, Sonora (*Thurber & Smith*), Mabibi (*Parry*). Hb. Kew.

2. **Aquilegia skinneri,** Hook. Bot. Mag. t. 3919. *A. mexicana* in the description.

Guatemala (*Skinner*). There is no specimen bearing either of these names in Hb. Kew.

3. **Aquilegia,** sp.

South Mexico, Mount Tanga, Oaxaca, 8000 feet (*Bourgeau*, 4574). Hb. Paris.

7. DELPHINIUM.

Delphinium, Linn. Gen. Plant. n. 681; Benth. et Hook. Gen. Plant. i. p. 9.

Perennial and annual herbs, natives of the temperate regions of the northern hemisphere. About 40 species are known.

1. **Delphinium bicornutum,** Hemsley, Diag. Pl. Nov. pars alt. p. 17.

Foliis palmatim 5-partitis, segmentis latiusculis 3–5-lobatis, floribus circiter pollicaribus, calcari calycino basi distincte bicornuto fere recto sepalis longiore, calcaribus petalinis calcari calycino æquilongis basi tantum tubulosis, petalis lateralibus basi appendiculatis, carpellis 3 immaturis pubescentibus.

Herba 2–3-pedalis, caulibus subsimplicibus crassiusculis, glabris, lævibus. *Folia* (radicalia mihi ignota) caulina inferiora longe petiolata, palmatim 5-partita; segmentis latiusculis, 1–1½-poll. longis, 3–5-lobatis, subtus sparse puberulis, petiolo usque 6-pollicari. *Pedunculi* pauciflori, bracteis linearibus. *Flores* pollicares, puberuli, pedicellati, pedicellis puberulis bibracteolatis, bracteolis subulatis; sepala oblonga, acuta vel obtusa, calcari fere recto basi distincte bicornuto deorsum spectante; petalorum superiorum laminis angustis obliquis, apice rotundatis breviter bifidis, calcaribus calcari calycino æquilongis basi tantum tubulosis; petala lateralia unguiculata, alte bifida valde barbata, ungue basi appendice squamiformi ornato; stamina leviter puberula. *Carpella* 3, immatura, puberula.

South Mexico, Oaxaca (*Ghiesbreght*). Hb. Kew.

Characterized by the distinctly bifid, relatively long calyx-spur, the rather long basal appendage of the lateral petals, the short tubular portion of the spurs of the upper petals, &c.

2. **Delphinium latisepalum,** Hemsley, Diag. Pl. Nov. pars alt. p. 17.

Foliis palmatim 5-partitis, segmentis latiusculis semel vel bis lobatis, bracteis linearibus, floribus subvillosis circiter pollicaribus, calcari calycino basi integro leviter curvato sursum spectante sepalis æquali vel breviore, calcaribus petalinis calcari calycino æquilongis basi tantum tubulosis, petalis lateralibus exappendiculatis, carpellis 3 immaturis pubescentibus.

Herba sesquipedalis, plus minusve pubescens vel villosa, caulibus subsimplicibus. *Folia* palmatim 5-partita, 1½–3 poll. diametro; radicalia segmentis latiusculis, 3–5-lobatis, petiolo 2–3-pollicari; caulina segmentis linearibus integris. *Pedunculi* pauciflori, pedicellis gracilibus. *Flores* villosi, circiter pollicares; sepala late oblongo-elliptica, rotundata, calcari basi integro leviter curvato sursum spectante sepalis æquali vel breviore; petalorum superiorum laminis angustis vix obliquis, apice brevissime bifidis, calcaribus calcari calycino æquilongis basi tantum tubulosis; petala lateralia anguste unguiculata, basi exappendiculata, alte bifida, utrinque valde barbata; stamina glabra. *Carpella* 3, immatura, cano-pubescentia.

South Mexico, Cordillera of Oaxaca, 8000 to 8500 feet (*Galeotti*, 4547). Hb. Kew.

This differs from the other Mexican species described here in its relatively short upturned calyx-spur, broad sepals, &c.

3. **Delphinium leptophyllum,** Hemsley, Diag. Pl. Nov. pars alt. p. 18.

Foliis alte palmatim 5-partitis, segmentis angustis alte trisectis, lobis ultimis linearibus, floribus

sesquipollicaribus, calcari basi integro leviter curvato deorsum spectante sepalis longiore, calcaribus petalinis calcari calycino æquilongis ultra medium tubulosis, petalis lateralibus exappendiculatis, carpellis 3 puberulis.

Herba biennis seu perennis, 2–3 ped. alta, caule tereti glabro lævi vix ramoso. *Folia* glabra, alte palmatim 5-partita, segmentis alte trisectis, laciniis ultimis linearibus obtusis, lamina 1½–3 poll. diametro, petiolo foliorum radicalium gracili 5–6-pollicari, superiorum gradatim breviore. *Pedunculi* elongati, 2–4-flori vel interdum probabiliter pluriflori. *Flores* distantes, puberuli, longe graciliterque pedicellati circiter sesquipollicares, pedicellis puberulis 2–3-pollicaribus, bracteis bracteolisque lineari-subulatis; sepala glabrescentia, oblongo-elliptica, apice rotundata, semipollicaria, calcari basi integro leviter curvato deorsum spectante sepalis longiore; petalorum superiorum laminis oblique oblongis, apice breviter bifidis fere glabris quam sepala brevioribus, calcaribus calcari calycino æquilongis, ultra medium tubulosis; petala lateralia unguiculata, basi exappendiculata, intus leviter barbata, alte bifida, lobis acutis; stamina glabra. *Carpella* 3, immatura, puberula.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 7). Hb. Kew.

This species is characterized by the long narrow lobes of its palmately-divided leaves, by the spurs of the petals equalling the calyx-spur and tubular from the base to above the middle, and by the lateral petals being deeply bifid, not furnished with an appendage at the base, and only slightly bearded.

4. **Delphinium pedatisectum,** Hemsley, Diag. Pl. Nov. pars alt. p. 18.

Foliis caulinis pedatisectis, segmentis 7–3 integerrimis, floribus 1–1¼ poll. longis, calcari calycino basi integro leviter curvato deorsum spectante sepalis longiore, calcaribus petalinis calcari calycino fere tertia parte brevioribus vix ad medium tubulosis, petalis lateralibus basi minute appendiculatis, carpellis 3 immaturis pubescentibus.

Herba erecta, ramosa, ramis teretibus glaberrimis lævibus. *Folia* radicalia ignota, caulina inferiora pedatisecta 7-loba, superiora trisecta, lobis linearibus 1–2 poll. longis, subtus pubescentibus. *Pedunculi* elongati, circiter 4-flori. *Flores* distantes, puberuli, longe graciliterque pedicellati, circiter pollicares, pedicellis puberulis, bracteis bracteolisque lineari-subulatis; sepala glabrescentia oblique oblonga, calcari basi integro leviter curvato deorsum spectante; petalorum superiorum laminis angustis alte bifidis, lobis acutis, calcaribus calcari calycino multo brevioribus non vel vix ad medium tubulosis extus intusque puberulis; petala lateralia unguiculata, intus barbata, limbo bipartito, ungue basi appendice squamiformi ornato; stamina glabra. *Carpella* 3, immatura, tomentosa, stylis elongatis.

Mexico (*Parkinson*), without locality. Hb. Kew.

Distinguished by the pedatisect leaves, by the spurs of the deeply bifid upper petals being shorter than the calyx-spur, and by the bipartite lateral petals having a scale-like appendage at the base.

5. **Delphinium wislizeni,** Engelm. Bot. Wisliz. Exp. p. 22.

North Mexico, Cosiquiriachi (*Wislizenus*).

Order II. DILLENIACEÆ.

Dilleniaceæ, Benth. et Hook. Gen. Plant. i. p. 10.

This order consists of about eighteen genera and 180 species of trees, shrubs, and a few herbaceous plants. They inhabit the tropics of both worlds, but are most numerous in Extratropical Australia. A few are found in Eastern Temperate Asia and North America.

Tribe DELIMEÆ.

1. DAVILLA.

Davilla, Vahl, DC. Syst. i. p. 404 (*Hieronia*, Vell. Fl. Flum. v. t. 116); Benth. et Hook. Gen. Plant. i. p. 12.

About fourteen species of climbing or twining shrubs, natives of tropical America.

1. **Davilla kunthii**, A. St.-Hil. Plant. Us. Bras. sub t. 22, p. 6.

Davilla lucida, Presl, Reliq. Hænk. ii. p. 37; Seem. Bot. Voy. 'Herald,' t. 13.
Davilla ovata, Presl.

PANAMA, Rio Grande railway-station (*S. Hayes*), Chagres (*Fendler*, 26), Veraguas (*Seemann*).—COLOMBIA to BRAZIL. Hb. Kew.

2. **Davilla rugosa**, Poir. Enc. Sup. ii. p. 457, et in St.-Hil. Plant. Us. Bras. t. 22.

Davilla brasiliana, DC. Deless. Ic. Sel. i. t. 71.

NICARAGUA, Chontales (*Seemann*, 2); PANAMA, Chagres (*Fendler*, 26), Remedios (*Seemann*).—WEST INDIES, and COLOMBIA to BRAZIL. Hb. Kew.

3. **Davilla sagræana**, Rich. Fl. Cab. (Spanish ed.), i. p. 8.

Davilla multiflora, Seem., not of St.-Hil.
Tetracera multiflora, DC.

NICARAGUA, Chontales (*Tate*, 283); PANAMA, San Lorenzo (*Seemann*, 1621).—CUBA, PERU, and BRAZIL. Hb. Kew.

4. **Davilla**, sp. (1).

GUATEMALA (*Skinner*). Hb. Kew.

5. **Davilla**, sp. (2).

GUATEMALA (*Friedrichsthal*). Hb. Kew.

6. **Davilla**, sp. (3).

PANAMA, Island of Taboga (*Sinclair*). Hb. Kew.

2. CURATELLA.

Curatella, Linn. Gen. Plant. n. 679; Benth. et Hook. Gen. Plant. i. p. 12.

A genus of two species of small trees or shrubs peculiar to tropical America.

1. **Curatella americana**, Linn. Sp. Pl. p. 248; Aublet, Pl. Guian. t. 232.

SOUTH MEXICO, Acapulco (*Lay & Collie*); PANAMA, in meadows and stony places in

Veraguas and Panama (*Seemann*), Island of Taboga (*Hinds*).—Widely dispersed in Tropical SOUTH AMERICA, and also occurring in TRINIDAD. Hb. Kew.

3. DOLIOCARPUS.

Doliocarpus, Roland, DC. Syst. Veg. i. p. 405 (*Othlis*, Schott); Benth. et Hook. Gen. Plant. i. p. 12.

Soramia and *Calinea* of Aublet and *Ricaurtea* of Triana are referred hither. About eighteen shrubby species, restricted to Tropical America.

1. **Doliocarpus pubens**, Mart. in Flora, xxi., Beibl. p. 49.
Doliocarpus semidentatus, Garcke.

PANAMA, Chagres (*Fendler*, 50 and 305), village of La Mesa, Veraguas (*Seemann*).—BRAZIL. Hb. Kew.

2. **Doliocarpus**, sp. (? *D. pubentis* var.).

PANAMA, in woods, Mamei railway-station (*S. Hayes*, 497).—TRINIDAD; GUIANA. Hb. Kew.

3. **Doliocarpus**, sp.

PANAMA, Bujio railway-station (*S. Hayes*, 143). Hb. Kew.

4. TETRACERA.

Tetracera, Linn. Gen. Plant. n. 683 (*Euryandra*, Forst.; *Wahlbomia*, Thunb.); Benth. et Hook. Gen. Plant. i. p. 12.

A genus of about twenty-five species of climbing shrubs or trees, inhabiting the tropical regions of both the Old and New worlds. One species occurs in New Caledonia. Presl's are all doubtful species.

1. **Tetracera alata**, Presl, Reliq. Hænk. p. 71.
MEXICO (*Hænke*).

2. **Tetracera erecta**, Sessé et Moçino, DC. Syst. Veg. i. p. 404; Calques des Dess. Fl. Mex. 2 (?=*T. sessiliflora*, Tr. et Pl.).
MEXICO (*Moçino & Sessé*).

3. **Tetracera oblongata**, DC. Prodr. i. p. 67; Deless. Ic. Sel. i. t. 67.
PANAMA, near the town (*Seemann*, 337); BRAZIL. Hb. Kew.

4. **Tetracera portobellensis**, Beurling, in Vetenskaps Acad. Handl. 1854, p. 113.
PANAMA, in woods on the road to the city of Panama (*Billberg*).

5. **Tetracera rhamnifolia**, Presl, Reliq. Hænk. ii. p. 72.
PANAMA (*Hænke*).

6. **Tetracera salicifolia,** Presl, Reliq. Hænk. ii. p. 71.

MEXICO (*Hænke*).

7. **Tetracera sessiliflora,** Tr. et Pl. in Ann. Sc. Nat. 1862, p. 21.

Tetracera volubilis, H. B. K. non Linn.

Delima mexicana, Moç. et Sessé, DC. Syst. Veg. i. p. 407; Calques des Dess. Fl. Mex. 3.

SOUTH MEXICO, Acapulco (*Lay & Collie*), San Blas (*Hinds*); GUATEMALA (*Friedrichsthal*); PANAMA (*Weddell*), Chagres (*Fendler*, 27).—COLOMBIA. Hb. Kew.

8. **Tetracera volubilis,** Linn. Sp. Pl. p. 617; Lam. Encycl. t. 485; Tr. et Pl. *l. c.*

PANAMA (*Duchassaing*).

[*Recchia,* Moç. et Sessé, Fl. Mex. ined., DC. Syst. Veg. i. p. 44, is referred to *Rigiostachys* by Planchon, a genus placed in Simarubeæ by Bentham and Hooker].

Order III. MAGNOLIACEÆ.

Magnoliaceæ, Benth. et Hook. Gen. Plant. i. p. 16.

Trees or shrubs, about seventeen species, belonging to nine genera. Natives of Tropical and Eastern Temperate Asia, North America, a few occurring in Tropical and Temperate South America, New Zealand, and Australia. None hitherto discovered in Africa.

Tribe MAGNOLIEÆ.

1. MAGNOLIA.

Magnolia, Linn. Gen. Plant. n. 690; Benth. et Hook. Gen. Plant. i. p. 18.

About fourteen species known, whereof six are Asiatic (China, Japan, and the Himalaya Mountains), and the remainder North-American and Mexican.

1. **Magnolia dealbata,** Zucc. in Abhandl. bayer. Akad. ii. p. 369, t. 3 et 4.

SOUTH MEXICO, Cumbre de Obispo (*Schiede*).

2. **Magnolia schiedeana,** Schl. in Bot. Zeit. 1864, p. 144.

SOUTH MEXICO, between San Salvador and Jalapa (*Schiede*).

2. TALAUMA.

Talauma, Juss. Gen. Plant. p. 281; Hook. et Benth. Gen. Plant. i. p. 18.

Trees, about fifteen species, three or four of which inhabit Tropical America, and the remainder Tropical Asia, especially the eastern part, northward to Japan.

1. **Talauma mexicana,** Don, Gen. Syst. i. p. 85. 1836

Magnolia mexicana, DC., Calques des Dess. Fl. Mex. 6.

MEXICO (*Moçino & Sessé*).

2. **Talauma macrocarpa,** Zucc. in Abhandl. bayer. Akad. ii. p. 369 ad 478, t. 1 et 2.

South Mexico, Cumbre de Obispo (*Schiede*), on the Pacific slope of the mountains, at an altitude of about 1500 feet (ex *Zuccarini*).

This may be the same as *Magnolia dealbata*.

Tribe WINTEREÆ.

3. DRIMYS.

Drimys, Forst. Char. Gen. p. 42; Benth. et Hook. Gen. Plant. i. p. 18.

Evergreen shrubs and trees, six species, whereof one or two are American, ranging from Mexico to Chili, one is a native of Borneo, one of New Zealand, and two of Australia.

1. **Drimys granatensis,** H. B. K., var. **sylvatica,** St.-Hil. Pl. Us. Bras. t. 27.

South Mexico, Sierra Colorada near San Andres, and Cuesta Grande de Jalacingo (*Schiede & Deppe*).—Colombia to Brazil. Hb. Kew.

2. **Drimys mexicana,** Moçino et Sessé, DC. Syst. i. p. 444; Calques des Dess. Fl. Mex. 5.

South Mexico, Laguna de Tanetze (*Hartweg*). Hb. Kew.

Probably not specifically different from *D. granatensis*, which has a very wide distribution in South America.

Order IV. ANONACEÆ.

Anonaceæ, Benth. et Hook. Gen. Plant. i. p. 20.

Trees or shrubs, often climbing, comprising about fifty genera and 450 species, nearly all within the tropics of Asia, Africa, and America, a few occurring in North America, and Subtropical South America, Africa, and Australia.

Tribe UVARIEÆ.

1. SAPRANTHUS.

Sapranthus, Seem. Journ. Bot. iv. p. 369; Benth. et Hook. Gen. Plant. i. p. 956 (where it is referred to the genus *Porcelia*).

The following is the only species.

1. **Sapranthus nicaraguensis,** Seem. Journ. Bot. iv. p. 369, t. 54.

Guatemala (*Friedrichsthal*); Nicaragua, between Leon and Granada (*Seemann*). Hb. Kew.

2. UVARIA.

Uvaria, Linn. Gen. Plant. n. 692; Benth. et Hook. Gen. Plant. i. p. 23.

About thirty-five species, shrubby climbers. Bentham and Hooker (*l. c.*) limit the genus to the tropics of the Old World; and the affinities of the following plant are uncertain, as its flowers are unknown.

1. **Uvaria (Porcelia ?) hahniana,** Baill. Adans. viii. p. 347.

South Mexico, mountain woods, Coachilote (*Hahn*, 239). Hb. Paris.

3. ASIMINA.

Asimina, Adans. ex Dunal, Anon. p. 81; Benth. et Hook. Gen. Plant. i. p. 24.

Shrubs or small trees: four North-American species, and two or three Mexican and Central-American.

1. **Asimina campechiana,** H. B. K. Nov. Gen. et Sp. v. p. 61.

South Mexico, about Campeche (*Humboldt & Bonpland*).

2. **Asimina,** sp. ?

South Mexico, Chinitan, between Tehuantepec and the river Goazacualcos (*Andrieux*, 543). Hb. Kew.

4. GUATTERIA.

Guatteria, Ruiz et Pav. Prodr. p. 85, t. 17; Benth. et Hook. Gen. Plant. i. p. 23.

About fifty species, trees or shrubs, confined to the warmer parts of America. The Asiatic species of various authors are referred to *Polyalthia* by Bentham and Hooker.

1. **Guatteria amplifolia,** Tr. et Pl. in Ann. Sc. Nat. xvii. (1862), p. 32.

Panama, Lion-Hill railway-station (*S. Hayes*, 346), Chagres (*Fendler*, 3). Hb. Kew.

2. **Guatteria bibracteata,** Hemsley, Diag. Pl. Nov. pars i. p. 1.

Anona? bibracteata, Hook. Ic. Pl. iv. t. 328 (char. emend.).

Ramis gracilibus, junioribus rufo-pubescentibus, foliis breviter petiolatis oblongo-lanceolatis obtuse acuminatis vel gradatim attenuatis petiolisque sparse pubescentibus, floribus longe pedunculatis, pedunculis infra medium bibracteatis, bracteis foliaceis.

Arbor . . . ramis gracilibus glabrescentibus. *Folia* breviter petiolata, oblongo-lanceolata, 3–4 poll. longa, integerrima, obtuse acuminata, basi attenuata, subtus secus costam mediam et marginem leviter pubescentia demum glabra, supra præter costam canaliculatam glabra, nitida, petiolis 1–2 lineas longis. *Pedunculi* graciles, oppositifolii, 1–2-flori, infra medium 2-bracteati, 2–3 poll. longi; bracteis amplis foliaceis inæqualibus, inferiore majore late cordato-ovata pollicari. *Flores* virides, parvi, pubescentes; sepala ovata, 1 lin. longa; petala oblonga, obtusa, subcoriacea, ad 3 lin. longa. *Carpella* ovata, semipollicaria, brevissime stipitata.

South Mexico, Consoquitla, Vera Cruz (*Linden*, 982); Mexico, without special locality (*Harris*). Hb. Kew.

This species is near the Brazilian *G. macropus* and the Colombian *G. longipes*, but readily distinguished from both by its extra-axillary flowers and the shape of its bracts.

3. **Guatteria diospyroides,** Baill. Adans. viii. p. 269.
South Mexico, Chinantla (*Liebmann*). Hb. Kew.

4. **Guatteria galeottiana,** Baill. Adans. viii. p. 268.
South Mexico, Comaltepec, Tuitalungo, and Lobani (*Liebmann*), Campeche (*Linden*). Hb. Paris.

5. **Guatteria jurgensenii,** Hemsley, Diag. Pl. Nov. pars i. p. 1.

Ramis teretibus, foliis amplis lanceolatis acuminatis breviter petiolatis subtus sparse pilosulis, floribus solitariis axillaribus pedunculatis, pedunculis ad medium articulatis infra articulationem multibracteatis, bracteis minutis (?) cito deciduis.

Arbor? *Rami* teretes, glabrescentes. *Folia* subcoriacea, lanceolato-oblonga, 6–9-poll., longe et obtuse acuminata, basi cuneata, petiolata, integerrima, supra glabra nitida reticulato-venosa, subtus sparse pilosula costa elevata venis reticulatis prominentibus; petiolis crassis, 3–4 lin. longis. *Pedunculi* ferrugineo-pubescentes, 9–12 lineas longi, infra medium articulati, supra articulationem ebracteati, sursum gradatim incrassati, infra articulationem graciliores pluribracteati, bracteis deciduis. *Flores* sericeo-pubescentes, circiter 1 poll. diametro; sepalis 3, subrotundatis, acutis, 2–3 lin. longis; petalis 6, fere æqualibus, coriaceis, obovato-ellipticis, acutis, extus intusque sericeis; stamina numerosissima, styli æquilonga, connectivo ultra loculos antherarum late truncato dilatato; ovaria numerosissima, sericea, stylis brevissimis. *Fructus* nobis ignotus.

South Mexico, Sierra San Pedro Nolasco, Talea, &c. (*Jurgensen*, 718). Hb. Kew.

This species appears to be closely allied to *G. galeottiana*, Baillon, from which, however, it differs in various characters, judging from his description.

6. **Guatteria macrantha,** Presl, Reliq. Hænk. ii. p. 78.
Mexico (*Hænke*).

7. **Guatteria schomburgkiana,** Mart. Fl. Bras. Anon. p. 38, in adnot.
Panama, San Lorenzo (*Seemann*); Guiana and Brazil. Hb. Kew.

8. **Guatteria,** sp.
Nicaragua, Chontales (*Tate*, 2). Hb. Kew.

9. **Guatteria,** sp.
Nicaragua, Chontales (*Tate*, 4). Hb. Kew.

10. **Guatteria,** sp.
Costa Rica (*Endres*, 176). Hb. Kew.

11. **Guatteria,** sp.
Costa Rica, 3500 feet (*Endres*, 13). Hb. Kew.

Tribe UNONEÆ.

5. ANAXAGOREA.

Anaxagorea, St.-Hil. in Bull. Soc. Philom. 1825, ex Blume, Fl. Jav. Anon. p. 64, t. 32; Benth. et Hook. Gen. Plant. i. p. 25.

Trees. Seven species, three inhabiting Tropical Asia and four Tropical America.

1. **Anaxagorea crassipetala,** Hemsley, Diag. Pl. Nov. pars i. p. 2.

Ramis teretibus petiolisque rufo-puberulis, foliis vix coriaceis lanceolatis acuminatis, floribus geminatim pedunculatis, petalis crasse coriaceis 3 exterioribus ovatis obtuse acuminatis, 3 interioribus lanceolatis acutis brevioribus, carpellis graciliter stipitatis.

Arbor? *Rami* teretes, rufo-puberuli. *Folia* petiolata vix coriacea, glabra, lanceolata, 6–9 poll. longa, acute acuminata, costa venisque lateralibus distantibus infra prominentibus, petiolis rufo-puberulis teretibus ad 4 lin. longis. *Pedunculi* axillares, brevissimi, biflori; pedicellis rufo-puberulis, 4–6 lin. longis, juxta flores bibracteolatis, bracteolis latis brevibus persistentibus. *Flores* parvi, rufo-puberuli; sepala 3, triangularia, 2–3 lin. longa; petala 6, crasse coriacea vel fere carnosa, 3 exteriora ovata, obtuse acuminata, 5–6 lin. longa, 3 interiora lanceolata, acuta, ad 3 lin. longa. *Carpella* 5–10, rufo-puberula, demum glabra, longe graciliterque stipitata, seminibus nitidis rufo-fuscis.

NICARAGUA, Chontales (*Tate*, 3, *Seemann*, 3). Hb. Kew.

A very distinct species, if the petals of the other American species have been correctly described. In other characters it approaches very closely to *A. acuminata*, which has yellowish branches, thicker leaves, shorter and stouter petioles, and the lateral veins distinctly run together, and the stipes of the carpels is stouter.

6. UNONA.

Unona, Linn. f. Suppl. p. 270.

This genus, according to Bentham and Hooker, Gen. Plant. i. p. 24, is confined to the tropics of the Old World. The following plant is not quoted under any other genus. It is probably a *Sapranthus* or an *Asimina*.

1. **Unona violacea,** Dunal, Monogr. Anon. p. 105, t. 25.

SOUTH MEXICO (*Moçino & Sessé*).

Tribe MITREPHOREÆ.

This tribe is chiefly Asiatic.

7. CYMBOPETALUM.

Cymbopetalum, Benth. in Journ. Linn. Soc. v. p. 69; Benth. et Hook. Gen. Plant. i. p. 27.

Small trees. Two or three species, the third one a native of Brazil and Peru.

1. **Cymbopetalum penduliflorum,** Baill. Adans. viii. p. 268.
Unona penduliflora, Dunal, Monogr. Anon. t. 28.
South Mexico, Pital (*Liebmann*). Hb. Kew.

2. **Cymbopetalum,** sp.
South Mexico, Chiapas (*Ghiesbreght*, 721). Hb. Kew.

Tribe XYLOPIEÆ.

8. ROLLINIA.

Rollinia, St.-Hil. Fl. Bras. Mer. i. p. 28, t. 5; Benth. et Hook. Gen. Plant. i. p. 27.

Trees or shrubs. 20 species, natives of the warmer parts of America.

1. **Rollinia mucosa,** Baill. Adans. viii. p. 268.
Rollinia sieberi, A. DC.
Anona mucosa, Jacq.
South Mexico, Mecapulco and Mirador (*Liebmann*); without locality (*Ocampo*). —Also in Trinidad and St. Vincent. Hb. Paris.

2. **Rollinia,** sp.
Guatemala (*Friedrichsthal*). Hb. Kew.

3. **Rollinia,** sp.?
South Mexico, valley of Cordova (*Bourgeau*, 2448). Hb. Kew.

9. ANONA.

Anona, Linn. Gen. Plant. no. 693; Benth. et Hook. Gen. Plant. i. p. 27.

About fifty species, trees and shrubs, widely spread in Tropical America, two or three having a wide range in Tropical Africa and Asia, though originally introduced from America.

1. **Anona cherimolia,** Mill. Dict. ed. 9, no 5; Bot. Mag. t. 2011.
Anona tripetala, Ait.
South Mexico, region of Orizaba (*Bourgeau*, 2451, *Botteri*), Jalapa (*Linden*); Panama, Chiriqui (*Seemann*). Hb. Kew.
Widely spread in Tropical America, frequently as an escape from cultivation.
Naturalized in some of the West-Indian Islands, according to Grisebach.

2. **Anona cinerea,** Dunal, Monogr. Anon. p. 72, t. 8.
South Mexico, Vera Cruz (*Schiede & Deppe*).
Perhaps the same as *A. squamosa.*

3. **Anona? depressa,** Baill. Adans. viii. p. 267.
South Mexico, Tozamapa (*Liebmann*).

4. **Anona echinata,** Dunal, Monogr. Anon. p. 68, t. 4.

Widely dispersed in TROPICAL SOUTH AMERICA and reaching—PANAMA, Bujio railway-station (*S. Hayes*, 142). Hb. Kew.

5. **Anona excelsa,** H. B. K. Nov. Gen. et Sp. v. p. 59.

SOUTH MEXICO, near La Venta del Exido (*Humboldt & Bonpland*).

6. **Anona globiflora,** Schl. in Linnæa, x. p. 235.

SOUTH MEXICO, Papantla (*Liebmann*), near the Hacienda de la Laguna (*Schiede*). Hb. Kew.

7. **Anona involucrata,** Baill. Adans. viii. p. 265.

SOUTH MEXICO, Tlatatla (*Liebmann*). Hb. Kew.

8. **Anona liebmanniana,** Baill. Adans. viii. p. 266.

SOUTH MEXICO, Comaltepec (*Liebmann*).

9. **Anona muricata,** Linn. Sp. Pl. p. 756; Jacq. Obs. i. t. 5.

Anona bonplandiana, H. B. K.

Native of Tropical America, and commonly cultivated. Perhaps not indigenous in CENTRAL AMERICA and MEXICO. Propanche de la Concepcion (*Liebmann*). Hb. Kew.

Grisebach thinks this may be indigenous only in some of the West-Indian Islands.

10. **Anona palustris,** Linn. Sp. Pl. p. 757.

Also commonly cultivated.

SOUTH MEXICO, Vera Cruz (*Schiede*).

11. **Anona purpurea,** DC. Prodr. i. p. 84; Dunal, Monogr. Anon. t. 2.

SOUTH MEXICO (*Moçino & Sessé*); PANAMA (*Duchassaing*). Hb. Kew.

12. **Anona reticulata,** Linn. Sp. Pl. p. 757.

PANAMA, Island of Taboga (*Seemann*). Hb. Kew.

Commonly cultivated for its fruit, and widely dispersed in Tropical America.

13. **Anona squamosa,** Linn. Sp. Pl. p. 757; Jacq. Obs. i. t. 6. fig. 1.

Cultivated. Hb. Kew.

14. **Anona,** sp.

PANAMA, Chagres (*Fendler*). Hb. Kew.

15. **Anona,** sp. (aff. *A. sylvatica*, A. St.-Hil.).

SOUTH MEXICO, region of Orizaba (*Bourgeau*, 2482). Hb. Kew.

16. **Anona,** sp.

SOUTH MEXICO (*Hahn*). Hb. Kew.

17. **Anona,** sp. (? *A. sericeæ* var. foliis pedalibus).

PANAMA, Obispo Falls (*S. Hayes*, 127). Hb. Kew.

10. XYLOPIA.

Xylopia, Linn. Gen. Plant. no. 1027 (*Waria,* Aubl. Guian. p. 604, t. 243); Benth. et Hook. Gen. Plant. i. p. 28.

Trees and shrubs. About thirty species, whereof five are Indian, seven or eight African, and the remainder Tropical-American.

1. **Xylopia frutescens,** Aubl. Guian. i. p. 602, t. 292.

Panama (*S. Hayes*, 670), Veraguas and the island of Coiba (*Seemann*, 312).—Guiana; Brazil. Hb. Kew.

2. **Xylopia grandiflora,** St.-Hil. Fl. Bras. Merid. i. p. 40, t. 8.

Panama, Savannas from Panama to Veraguas (*Seemann*).—Also in Jamaica, Trinidad, Cuba, Colombia, Peru, and Brazil. Hb. Kew.

Planchon and Triana refer this to *X. longifolia.*

3. **Xylopia longifolia,** A. DC. in Mém. Soc. Gen. v. p. 210.

Unona lucida, DC.

Panama, Rio Grande railway-station (*S. Hayes*, 173), on the margin of woods near the town of Panama (*Seemann*, 311), Island of Taboga (*Barclay*).—Colombia and Guiana. Hb. Kew.

4. **Xylopia trunciflora,** Schl. et Ch. in Linnæa, vi. p. 417.

South Mexico, between Colipa and the sea-shore (*Schiede & Deppe*).

11. TRIDIMERIS.

Tridimeris, Baill. Adans. ix. p. 219.

The following is the only known species; it is a small tree.

1. **Tridimeris hahniana,** Baill. Adans. ix. p. 219.

South Mexico, forests of San Cristobal (*Hahn*). Hb. Paris.

Order V. MENISPERMACEÆ.

Menispermaceæ, Benth. et Hook. Gen. Plant. i. p. 30.

Dicœcious climbing shrubs, a few herbaceous, and a few arboreous, belonging to about thirty genera, the number of species probably not exceeding 100.

Tribe TINOSPOREÆ.

1. ODONTOCARYA.

Odontocarya, Miers in Ann. Nat. Hist. ser. 2, vii. p. 38 (*ex parte*), et ser. 3, xiv. p. 97; Benth. et Hook. Gen. Plant. i. pp. 34 et 960.

Climbing shrubs. Miers, *l. c.*, describes eight species of this genus, which Bentham

and Hooker regard as forms of one variable species widely dispersed in Tropical South America, but not hitherto detected north of Panama.

1. **Odontocarya tamoides,** Benth. et Hook. Gen. Plant. i. p. 960.

Odontocarya hederæfolia, Miers, Contrib. Bot. iii. p. 64, t. 100.

Panama, on old walls and ruins (*S. Hayes*, 201). Hb. Kew.

This particular form or species occurs in Brazil, Guiana, and Peru.

Tribe COCCULEÆ.

2. COCCULUS.

Cocculus, DC. Syst. Veg. i. p. 515; Benth. et Hook. Gen. Plant. i. p. 36.

Climbing shrubs. About ten species, whereof two or three are natives of the warmer parts of North America, the others of Tropical Africa and Asia, extending into the temperate regions in China and Japan.

1. **Cocculus diversifolius,** DC. Syst. i. p. 543; Calques des Dess. Fl. Mex. 10.

Cocculus oblongifolius, DC. Syst. i. p. 529; Calques des Dess. Fl. Mex. 11.

Texas to—South Mexico, Sonora Alta (*Coulter*, 656 and 657), Matamoras (*Berlandier*, 2300), Monterey, Nuevo Leon (*Eaton & Edwards*), hedges on the tableland of Tehuacan, Puebla, 5000 feet (*Galeotti*, 1536). Hb. Kew.

Tribe CISSAMPELIDEÆ.

3. CISSAMPELOS.

Cissampelos, Linn. Gen. Plant. n. 1138; Benth. et Hook. Gen. Plant. i. p. 37.

Climbing shrubs, exceedingly variable in foliage. Many of the forms have been described as species; but Bentham and Hooker, *l. c.*, state that there are no more than eighteen distinct species, twelve of which are Tropical-American, five African, chiefly in the south, and 1, *C. pareira*, very widely dispersed in tropical countries.

1. **Cissampelos grandifolia,** Tr. & Pl. Prodr. Fl. N. Gran. i. p. 44.

Panama (*S. Hayes*, 168).—Colombia. Hb. Kew.

2. **Cissampelos heterophylla,** DC. Syst. i. p. 534.

"New Spain."

3. **Cissampelos microcarpa,** DC. Syst. i. p. 534.

Panama, in sunny situations about Tolé, Veraguas (*Seemann*). Hb. Kew.

Probably only a variety of *C. pareira*; but Planchon and Triana regard it as distinct.

4. **Cissampelos pareira,** Lamarck, Ill. t. 830.

Cissampelos canescens, Miq.

Cissampelos acuminata, Benth.

South Mexico, Vera Cruz (*Galeotti*, 4623), Cordova (*Bourgeau*, 2167), in hedges near Tanetze (*Hartweg*, 445); Nicaragua (*Tate*, 7, 8, 9, and 10); Costa Rica (*Endres*, 190); Panama, Tolé (*Seemann*, 313). Hb. Kew.

Widely dispersed in nearly all tropical countries.

5. **Cissampelos tomentosa,** DC. Syst. i. p. 535.

South Mexico, Campeche.

Tribe PACHYGONEÆ.

4. HYPERBÆNA.

Hyperbæna, Miers, in Ann. Nat. Hist. ser 2, vii. p. 44.

Climbing shrubs. Three or four species, growing in Tropical America.

1. **Hyperbæna mexicana,** Miers, in Ann. Nat. Hist. ser. 2, vii. p. 44.

South Mexico (*Jurgensen*, 91). Hb. K.

Grisebach refers this to *Cocculus domingensis*, DC.

[**Agdestis clematidea,** Moç. et Sessé in DC. Syst. i. p. 543; Calques des Dess. Fl. Mex. 12 and iii. A; is a Phytolaccacea.]

Order VI. BERBERIDEÆ.

Berberideæ, Benth. et Hook. Gen. Plant. i. p. 40.

Herbs, under-shrubs, or shrubs, comprising twenty genera and perhaps 100 species, chiefly in the temperate regions of the northern hemisphere, including the mountains of tropical countries, and in the southern parts of South America. Apparently quite absent from South Africa, Australia, and New Zealand.

Tribe BERBEREÆ.

1. BERBERIS.

Berberis, Linn. Gen. Plant. n. 442; Benth. et Hook. Gen. Plant. i. p. 43 (*Mahonia,* Nutt.).

Shrubs. Nearly 100 forms have been described as species; but Bentham and Hooker estimate the number of distinct species at fifty, whereof fifteen are Asiatic, one of these extending to Europe and North America, and another to the mountains of Eastern Tropical Africa; the remainder chiefly in mountainous regions of America, from Oregon to Fuegia.

1. **Berberis andrieuxii,** Hook. in Bot. Beech. Voy. p. 318, adnot.
South Mexico (*Andrieux*, 318). Hb. Kew.

2. **Berberis angustifolia,** Hartw. in Benth. Pl. Hartw. p. 34.
North Mexico, Boundary Survey, 21; South Mexico, Cuesta between Pachuca and Actopan (*Hartweg*). Hb. Kew.

3. **Berberis aquifolium,** Pursh, Fl. Am. Sept. i. p. 219, t. 4; Bot. Reg. t. 1425.
Oregon to—North Mexico, Monterey, Nuevo Leon. Hb. Kew.

4. **Berberis chococo,** Schl. in Bot. Zeit. 1854, p. 652.
South Mexico, Minoschitla and Barranca, near Chococala (*Ehrenberg*).

5. **Berberis dealbata,** Lindl. Bot. Reg. t. 1750.
Mexico; cultivated at Chiswick. Hb. Kew.

6. **Berberis ehrenbergii,** Kunze, in Linnæa, xx. p. 45.
South Mexico (*Ehrenberg*).

7. **Berberis fraxinifolia,** Hook. Ic. Pl. t. 329 & 330.
South Mexico, Jalapa (*Galeotti*), Mirador, Vera Cruz (*Linden*, 991), Mexico (*Lane*). Hb. Kew.

8. **Berberis fremontii,** Torr. in Bot. U. S. Mex. Bound. Surv. p. 30.
Texas and New Mexico to,—North Mexico, Sonora (*Smith*).

9. **Berberis gracilis,** Hartw. in Benth. Pl. Hartw. p. 34.
North and South Mexico, Zimapan, Cardonal and Atotonilco el Grande (*Hartweg*, 271). Hb. Kew.
Var.? North Mexico, region of San Luis Potosi, 6000 to 7000 feet (*Parry & Palmer*, 8).

10. **Berberis hartwegii,** Benth. Pl. Hartw. p. 34.
South Mexico, at the Contadero between Tula and St. Barbara (*Hartweg*, 272). Hb. Kew.

11. **Berberis ilicina,** Hemsl.; *Mahonia ilicina*, Schl. in Linnæa, x. p. 236.
Mahonia trifolia, Schl. et Ch. in Linnæa, v. p. 211.
South Mexico, in plains between Guantololalpa and Tlachichuca (*Schiede & Deppe*); Mexico, without locality (*Aschenborn*). Hb. Paris.

12. **Berberis lanceolata,** Benth. Pl. Hartw. p. 34.
South Mexico, near Apulco (*Hartweg*, 269). Hb. Kew.

13. **Berberis pallida,** Hartw. in Benth. Pl. Hartw. p. 34.
South Mexico, scarce at the Cardonal la Majada, San José del Oro, Zacuatlipan, and Atotonilco (*Hartweg*, 268), Zimapan (*Coulter*, 667). Hb. Kew.

14. **Berberis paniculata,** Œrst. in Nat. For. Medd. 1855.
COSTA RICA, Volcan de Irazu, 8000 to 9000 feet (*Œrsted*). Hb. Kew.

15. **Berberis pinnata,** Lag. Elench. Hort. Madr. 1803, p. 6; DC. Syst. ii. p. 19; Calques des Dess. Fl. Mex. 13; H. B. K. Nov. Gen. et Sp. v. p. 71, t. 434.
Berberis fasciculata, Sims, Bot. Mag. t. 2396.
Mahonia fascicularis, DC.
CALIFORNIA to—SOUTH MEXICO, woods near Real del Monte (*Galeotti*, 4644), Peak of Orizaba (*Linden*, 993), mountains of Guanajuato (*Hartweg*, 8). Hb. Kew.
Probably two species are confused here.

16. **Berberis schiedeana,** Schl. in Bot. Zeit. 1854, p. 654.
SOUTH MEXICO, in Los Llanos, between Guantololapa and Tlachichuca (*Schiede*).

17. **Berberis tenuifolia,** Lindl. Bot. Reg. 1838, Misc. p. 64.
SOUTH MEXICO, Zacuapan, near Vera Cruz (*Hartweg*). Hb. Kew.

18. **Berberis trifoliolata,** Moricand, Pl. Nouv. d'Amér. p. 113, t. 69.
TEXAS, NEW MEXICO to—NORTH MEXICO, Buena Vista, Coahuila, Chihuahua, Nuevo Leon, &c. (*Gregg & Thurber*).

19. **Berberis,** sp.
SOUTH MEXICO, about Toluca (*Andrieux*, 542). Hb. Kew.

20. **Berberis,** sp. (affinis *H. lanceolatæ*).
GUATEMALA, Volcan de Fuego (*Salvin*). Hb. Kew.

Order VII. NYMPHÆACEÆ.

Nymphæaceæ, Benth. et Hook. Gen. Plant. i. p. 45.

Aquatic herbs. About forty species, belonging to eight genera, growing in still or slowly-flowing fresh water, in nearly all parts of the world.

Tribe CABOMBEÆ.

1. BRASENIA.

Brasenia, Schreb. Gen. Pl. p. 372.
Hydropeltis, Michx. Fl. Bor.-Am. i. p. 323, t. 29.

Limited to the following species:—

1. **Brasenia peltata,** Pursh, Fl. Am. Sept. p. 389.
Hydropeltis purpurea, Michx. Bot. Mag. t. 1147.
SUBTROPICAL NORTH AMERICA.—SOUTH MEXICO, valley of Mexico (*Schaffner*, 483).—CUBA, AUSTRALIA, INDIA, and TROPICAL AFRICA. Hb. Kew.

2. CABOMBA.

Cabomba, Aubl. Pl. Guian. i. p. 321, t. 124; Benth. et Hook. Gen. Plant. i. p. 46.

Four species, confined to America.

1. **Cabomba aquatica,** Aubl. Guian. i. p. 321, t. 124.

SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*), Vera Cruz (*Gouin*), Rio Champoton, Yucatan (*Linden*).—GUIANA and valley of the AMAZON to S. Paulo, BRAZIL. Hb. Kew.

Tribe NYMPHÆÆ.

3. NYMPHÆA.

Nymphæa, Linn. Gen. Plant. n. 653; Benth. et Hook. Gen. Plant. i. p. 46.

Numerous forms have been described as species; but Bentham and Hooker estimate the number at about twenty. Natives of the temperate and subtropical regions of the northern hemisphere, and extending to subtropical regions in the south, in Africa and Australia. None of the species are found in Western North America. Doubtless some of the following are simply different names for the same thing.

1. **Nymphæa ampla,** DC. Syst. ii. p. 54; Bot. Mag. t. 4469.

Nymphæa candolleana, Lehm.; *N. leiboldiana,* Lehm.

TEXAS and NEW MEXICO.—NORTH MEXICO, Monterey (*Berlandier*, 279); SOUTH MEXICO, Vera Cruz to Orizaba (*F. Müller*), Colipa (*Karwinski*); NICARAGUA, neighbourhood of Granada (*Levy*, 147).—WEST INDIES and SOUTH AMERICA to BRAZIL. Hb. Kew.

2. **Nymphæa blanda,** C. F. W. Mey. Primitiæ Fl. Esseq. p. 201.

Nymphæa fenzliana, Lehm. Die Gatt. Nymph. p. 25.

Nymphæa rudgeana β, C. F. W. Mey.

GUATEMALA (*Fredrichsthal*); NICARAGUA, San Juan (*Lehmann*); PANAMA, in swamps near the city of Panama (*Seemann*).—JAMAICA and GUIANA. Hb. Kew.

3. **Nymphæa elegans,** Hook. Bot. Mag. t. 4604.

TEXAS to—SOUTH MEXICO, valley of Mexico, ditches at Santa Anita (flowers yellow) (*Bourgeau*, 4). Hb. Kew.

4. **Nymphæa gracilis,** Zucc. Pl. Nov. fasc. i. p. 362, et in Flora, 1832, ii., Beibl. p. 74.

SOUTH MEXICO, lakes near Oaxaca, 5000 feet (*Galeotti*), Mexico (*Karwinski*), ditches at Tacubaya, valley of Mexico (*Bourgeau*, 5), Aguas Calientes (*Hartweg*, 1592). Hb. Kew.

5. **Nymphæa jamesoniana,** Planch. in Rev. Hort. 1853, p. 5.
Nymphæa saggittariæfolia, Lehm. Die Gattung Nymph. p. 24.
CENTRAL AMERICA (*Lehmann*).—ECUADOR.

6. **Nymphæa mexicana,** Zucc. in Flora, 1832, ii., Beibl. p. 75.
SOUTH MEXICO, in a lake near the city of Mexico (*Karwinski*), around the city of Mexico (*Berlandier*).

7. **Nymphæa tussilagifolia,** Lehm. in Ind. Sem. Hort. Hamb. 1853, et Ann. Sc. Nat. série 4, vol. i. p. 326.
SOUTH MEXICO, Lake Chalco, near Yotla (*Lehmann*).—AMAZON.

8. **Nymphæa undulata,** Lehm. Die Gattung Nymph. p. 18.
SOUTH MEXICO (*Galeotti*, 4846 ?). Hb. Kew.

[SARRACENIACEÆ, Benth. et Hook. Gen. Plant. i. p. 48. This small family of "Pitcher-plants" is peculiar to America. Of the three known genera, two are monotypic—namely, *Heliamphora*, a native of Mount Roraima, Venezuela, and *Darlingtonia*, found only in California. *Sarracenia* itself numbers at least half a dozen species, which are natives of the eastern States of North America, from Florida northward to New England and North Illinois.]

Order VIII. PAPAVERACEÆ.

Papaveraceæ, Benth. et Hook. Gen. Plant. i. p. 49.

Twenty-five genera and about 160 species; herbs or rarely shrubs, chiefly natives of the temperate, subtropical, and frigid regions of the northern hemisphere. Several species are widely dispersed weeds of cultivation. More than a third of the genera are peculiar to the Mexico-Californian region.

Tribe EUPAPAVEREÆ.

1. ARGEMONE.

Argemone, Linn. Gen. Plant. n. 649; Benth. et Hook. Gen. Plant. i. p. 52.
Herbs. Six species, all natives of America.

1. **Argemone fruticosa,** A. Gray, Pl. Thurb. p. 306.
NORTH MEXICO, La Peña, Coahuila (*Thurber*, 844). Hb. Kew.

2. **Argemone grandiflora,** Sweet, Brit. Fl. Gard. iii. t. 226; Bot. Reg. t. 1264.
MEXICO, Raised from Mexican seeds by Mr. Barclay. Probably a variety of *A. mexicana*.

3. **Argemone hispida,** A. Gray, Pl. Fendl. p. 5.

UTAH to NEW MEXICO and—NORTH MEXICO, Sonora (*Thurber*). Hb. Kew.

4. **Argemone mexicana,** Linn. Sp. Pl. p. 727; Lam. Ill. t. 452.

NORTH-WEST MEXICO, common in the lower coast-region (*Seemann*), Province of Mexico (*Andrieux*, *Graham*, &c.); GUATEMALA (*Salvin*); COSTA RICA (*Endres*).

This is now a common weed in most tropical and subtropical countries.

5. **Argemone ochroleuca,** Sweet, Brit. Fl. Gard. iii. t. 242.

MEXICO.

Raised from seed by Mr. Barclay. Probably a variety of *A. mexicana*.

2. BOCCONIA.

Bocconia, Linn. Gen. Plant. n. 591; Benth. et Hook. Gen. Plant. i. p. 53.

Tall half-shrubby herbs. Three species, two of which are American; and the third, which has been described as a distinct genus (*Macleya*), is a native of China.

1. **Bocconia frutescens,** Linn. Sp. Pl. 634; Lam. Ill. t. 394.

β. cernua, Moç. et Sessé, DC. Prod. i. p. 91, and Calques des Dess. Fl. Mex. 14.

Widely spread in Tropical America, and extending to—SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1750), Mexico, without special localities (*Parkinson*, *Jurgensen*, *Galeotti*, *Linden*, and others); COSTA RICA, primeval forests of Angostura (*Polakowsky*). —JAMAICA, CUBA, &c. Hb. Kew.

2. **Bocconia integrifolia,** H. B. K. Nov. Gen. et Sp. i. p. 119, t. 35.

β. mexicana, DC. Prod. i. p. 91, and Calques des Dess. Fl. Mex. 15.

MEXICO.—COLOMBIA; PERU.

Tribe HUNNEMANNIEÆ.

This tribe is confined to the Mexico-Californian region.

3. HUNNEMANNIA.

Hunnemannia, Sweet, Brit. Fl. Gard. ser. 1, iii. p. 54.

The following is the only species, and is restricted to Mexico.

1. **Hunnemannia fumariæfolia,** Sweet, Brit. Fl. Gard. ser. 1, iii. t. 276; Bot. Mag. t. 3061.

NORTH and SOUTH MEXICO, Oaxaca (*Ghiesbreght*, 10), without special habitats (*Coulter*, 663, *Palmer*, 1031, *Gregg*, 211, and *Berlandier*). Hb. Kew.

4. ESCHSCHOLTZIA.

Eschscholtzia, Cham. in Nees, Hor. Phys. Berol. p. 73, t. 15 (*Chryseis,* Lindl. Bot. Reg. t. 1948); Benth. et Hook. Gen. Plant. i. p. 54.

Four or five species, natives of temperate North-western America, one extending into North Mexico.

1. **Eschscholtzia douglasii,** Hook. et Arn. Bot. Beech. Voy. p. 320.

CALIFORNIA, NEW MEXICO, and—NORTH MEXICO, Chihuahua and Sonora (*Torrey*), on the Rio Santa Maria, near Lake Gusman (*Bigelow*). Hb. Kew.

Tribe FUMARIEÆ.

5. CORYDALIS.

Corydalis, DC. Syst. Veg. ii. p. 113; Benth. et Hook. Gen. Plant. i. p. 55.

Herbaceous plants. About seventy species; four N.-American, four S.-African, the rest in Europe, North Africa, Asia Minor, Himalaya Mountains, and North Asia.

1. **Corydalis aurea,** Willd. Enum. p. 740.

This has a wide range in NORTH AMERICA, and extends to—MEXICO, without locality (*Coulter*, 664). Hb. Kew.

[Berlandier (n. 745) collected a species of *Papaver* in Mexico; and *Fumaria parviflora*, Lam., was collected in the Cordillera of Oaxaca, 6500 feet (*Galeotti*, 4731), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 9), Tacubaya (*Schaffner*, 35), Toluca (*Andrieux*, 538)].

Order IX. CRUCIFERÆ.

Cruciferæ, Benth. et Hook. Gen. Plant. i. p. 57.

About 180 genera and 1200 species. Annual or perennial herbs, rarely shrubs, dispersed over nearly the whole world, and reaching the utmost polar limits of flowering plants. Both genera and species are most abundant in the Mediterranean region, rare in the tropics.

Tribe ARABIDEÆ.

1. NASTURTIUM.

Nasturtium, Br. in Ait. Hort. Kew. iv. p. 109; Benth. et Hook. Gen. Plant. i. p. 68.

Upwards of eighty species have been proposed by various authors; but Hooker and Bentham estimate that there are scarcely twenty distinct species, several of them having a very wide range of distribution.

1. **Nasturtium ? arabiforme,** DC. Syst. ii. p. 200.

Arabis resedifl̃ora, H. B. K. Nov. Gen. et Sp. v. p. 81.

SOUTH MEXICO, between Santa Rosa de la Sierra and Puerto de Varientos (*Humboldt & Bonpland*), rivulets at 8000 to 9000 feet, Oaxaca (*Galeotti*, 4681). Hb. Kew.

2. **Nasturtium impatiens,** Ch. et Schl. in Linnæa, v. p. 212.

South Mexico, Peak of Orizaba, 11,000 to 12,000 feet (*Galeotti, Schiede & Deppe*). Hb. Kew.

3. **Nasturtium mexicanum,** Moç. et Sessé, DC. Syst. ii. p. 138, and Calques des Dess. Fl. Mex. 18. "Perhaps not distinct from *N. palustre*," DC. *l. c.*

South Mexico, in ditches near the city of Mexico (*Aschenborn*); Costa Rica, a weed in gardens, San José (*Polakowsky*).

4. **Nasturtium obtusum,** Nutt. in Torr. et Gr. Fl. N. Amer. i. p. 74.

Southern States of North America to—South Mexico, Orizaba (*Botteri*, 553), without exact locality, (*Müller*, 746). Hb. Kew.

5. **Nasturtium orizabæ,** Ch. et Schl. in Linnæa, v. p. 212.

South Mexico, Peak of Orizaba, 10,000 to 12,000 feet (*Galeotti*, *Linden*, *Schiede & Deppe*, and others), Santa Fé, valley of Mexico (*Bourgeau*, 760). Hb. Kew.

6. **Nasturtium officinale,** Br. in Ait. Hort. Kew. ed. 2, vol. iv. p. 110.

South Mexico, ditches near Tacubaya, valley of Mexico (*Bourgeau*, 468). Hb. Kew.

A wide range in Temperate Europe and Asia; introduced in Australia, New Zealand, and North America.

7. **Nasturtium palustre,** DC. Syst. ii. p. 191.

North and South Mexico, Chihuahua (*Torrey*), Santa Anita, valley of Mexico (*Bourgeau*, 16), Real del Monte (*Coulter*, 678), Mexico (*Schaffner*, *Hartweg*). Hb. Kew.

Widely dispersed in the temperate and frigid regions of the northern hemisphere.

8. **Nasturtium plebejum,** Polakowsky, in Linnæa, xli. p. 546.

Costa Rica, on the railroad near San José (*Polakowsky*).

9. **Nasturtium tanacetifolium,** Hook. et Arn. in Hook. Journ. Bot. i. p. 190.

Nasturtinm micropetalum, Fisch. et Mey.

Southern States of North America to—Mexico, Real del Monte (*Coulter*, 677), Ciudad Real (*Linden*, 1128), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 11). Hb. Kew.

10. **Nasturtium,** sp.

South Mexico, Aguas Calientes (*Hartweg*). Hb. Kew.

2. BARBAREA.

Barbarea, Br. in Ait. Hort. Kew. iv. p. 109; Benth. et Hook. Gen. Plant. i. p. 68.

Twenty species have been described; but Bentham and Hooker would reduce them to six. Two or three of them are amphigæus.

1. **Barbarea vulgaris,** Br. in Ait. Hort. Kew. ed. 2, vol. iv. p. 109.

North temperate zone, Australia, and S. Africa. The Mexican and North-American Boundary Commission collected specimens of this plant; but these may be from Texas or New Mexico. We have seen no undoubted Mexican specimens; nor is it enumerated in the 'Botany of California,' recently issued by the U. S. Geological Survey.

3. ARABIS.

Arabis, Linn. Gen. Plant. n. 18; Benth. et Hook. Gen. Plant. i. p. 69.

About 130 species are scattered in botanical works; but there are scarcely more than sixty well defined. The greater part inhabit Europe and North Asia; twelve occur in North America; and a few are natives of the southern hemisphere.

1. **Arabis (Turritis) patula,** Grah. in A. Gr. Pl. Fendl. i. p. 7.

Streptanthus virgatus, Nutt.

North America, through the Rocky Mountains from Lake Winnipeg to—North Mexico, Sonora (*Parry*), Lake Santa Maria, Chihuahua (*Bigelow*).

2. **Arabis,** sp. ?

South Mexico, valley of Mexico (*Bourgeau,* 285). Hb. Kew.

4. DRYOPETALON.

Dryopetalon, A. Gray, Pl. Wright. ii. p. 12, t. 11; Benth. et Hook. Gen. Plant. i. p. 69.

The genus is at present limited to the following species:—

1. **Dryopetalon runcinatum,** A. Gray, Pl. Wright. ii. p. 12, t. 11.

Texas and California to—North Mexico, mountains of Chihuahua and Sonora (*Bigelow, Parry, and Schott*).

5. STREPTANTHUS.

Streptanthus, Nutt. in Journ. Acad. Phil. v. p. 134, t. 7; Benth. et Hook. Gen. Plant. i. p. 69.

A genus of about fifteen species, confined to Western North America.

1. **Streptanthus carinatus,** A. Gray, in Proc. Am. Acad. vi. p. 183.

California, New Mexico, to—North Mexico. Hb. Kew.

2. **Streptanthus cordatus,** Nutt. in Torr. & Gray, Fl. N. Am. i. p. 77.

Colorado and California to—North Mexico, Sonora Pass ('Botany of California').

3. **Streptanthus linearifolius,** A. Gray, Pl. Fendl. p. 7.

New Mexico.—North Mexico, Guadaloupe Cañon, Sonora (*Thurber*), Chihuahua (*Schott*), Lake Santa Maria, Chihuahua (*Wright*). Hb. Kew.

4. **Streptanthus platycarpus,** A. Gray, Pl. Wright. ii. p. 10.

New Mexico and Texas to—North Mexico, Chihuahua and westward to Sonora (*Bigelow, Parry,* and others).

6. THELYPODIUM.

Thelypodium, Endl. Gen. Plant. p. 876 ; Benth. et Hook. Gen. Plant. i. p. 81.
Pachypodium, Nutt. in Torr. & Gray, Fl. N. Am. i. p. 96, nec Webb.
Macropodium, Hook. Bot. Misc. i. p. 341, t. 68.

A genus of about ten or twelve species, natives of California and Mexico.

1. **Thelypodium longifolium,** Watson, Bot. King's Exped. p. 25.

Streptanthus longifolius, Benth.

California and New Mexico to—South Mexico, Aguas Calientes (*Hartweg*, 52), Zimapan (*Coulter*, 687). Hb. Kew.

2. **Thelypodium petiolatum,** Hemsley, Diag. Pl. Nov. pars i. p. 2. (Tab. I.)

Foliis caulinis longe petiolatis ovato-cordatis serratis pubescentibus, floribus racemosis, siliqua stipitata tereti, cotyledonibus oblique incumbentibus.

Herba erecta (biennis ?), ramosa, 2–3 (magisve ?) ped. alta; ramis lignosis, teretibus, glabrescentibus. *Folia* radicalia mihi ignota, caulina longe petiolata; lamina membranacea, cordata, ovata vel supremorum lanceolata, 1½–2 poll. longa, acuta, serrata, plus minusve pubescente; petiolo gracili, ½–1½ poll. longo. *Flores* glabri (lilacini ?), 3–4 lin. longi, breviter graciliterque pedicellati; racemi elongati, paniculati, ebracteati; sepala basi æqualia, oblonga, obtusa; petala spathulati-oblonga (? ut in icone patentia); filamenta inappendiculata, basi leviter dilatata; antheræ rectæ, sagittatæ; stylus brevis; stigma emarginatum. *Siliqua* teres, glabra, brevissime stipitata, ad 1–1½ poll. longa; semina numerosa, uniseriata, oblonga, cotyledonibus plus minusve oblique incumbentibus.

South Mexico, Zimapan (*Coulter*, 684), Mount Guadalupe, near the city of Mexico (*Bourgeau*, 762). Hb. Kew.

This is a very distinct plant; but there was some difficulty in deciding what genus it should be placed in. Dr. A. Gray mentions (Proc. Am. Acad. Arts and Sciences, vi. p. 188) Coulter's number 684, and states that it is a strict congener of *Iodanthus pinnatifidus*; but the latter has perfectly accumbent cotyledons. On the whole our plant agrees very well with *Thelypodium* as defined by Watson ('Botany of California,' i. p. 37), which includes *Pachypodium* of Nuttall.

EXPLANATION OF TAB. I.

Portions of Plant, natural size; the fruiting specimen from Bourgeau's no. 762, and the flowering specimen from Coulter's no. 684.

Fig. 1, a flower; fig. 2, a pistil; fig. 3, a capsule; figs. 4, 5, and, 6, embryos in various positions. (All magnified.)

3. **Thelypodium wrighti,** A. Gray, Pl. Wright. i. p. 3.

North Mexico, along the Rio Grande, Nuevo Leon (*Schott*).

4. **Thelypodium,** sp. ?

South Mexico, Santa Fé (*Bourgeau*, 690). Hb. Kew.

7. CARDAMINE.

Cardamine, Linn. Gen. Plant. n. 812; Benth. et Hook. Gen. Plant. i. p. 70.

Species about sixty, inhabiting the temperate and frigid regions of nearly all parts of the world, but most numerous in Europe and the mountains of Central Asia.

1. **Cardamine angulata,** Hook. Bot. Misc. i. p. 343, t. 69.

OREGON and CALIFORNIA to,—SOUTH MEXICO, rivulets at 7000 feet, Peak of Orizaba (*Galeotti*, 3063). Hb. Kew.

2. **Cardamine hirsuta,** var. ?, Linn. Sp. Pl. p. 915.

SOUTH MEXICO, Orizaba (*Botteri*), near Tantoyuca (*Ervendberg*). Hb. Kew.

Temperate and subarctic regions in nearly all parts of the world.

3. **Cardamine schaffneri,** Hook. fil. in Hemsley, Diag. Pl. Nov. pars i. p. 2.

Foliis radicalibus eleganter pinnatipartitis lobis rotundato-ovatis irregulariter crenato-lobulatis, caulinis quasipinnatis, lobis distantibus lanceolatis acutis irregulariter pauciserratis, pedicellis elongatis patentibus, siliqua gracili adscendenti, seminibus numerosis uniseriatis.

Herba erecta, ramosa, 2–3-pedalis vel ultra sparse pilosula, pilis patentibus. *Caulis* crassus, angulatus. *Folia,* radicalia pinnatipartita, ad 4 pollicaribus (in specimino unico viso) lobis numerosis, ovatis, rotundatis oblongisve crenulato-lobulatis, basi attenuatis, 3–6 lin. longis, rhachide anguste alato, caulina quasipinnata, 2–5-pollicaria, rhachide vix alato; lobis 9–15 distantibus, lineari-lanceolatis, acutis, basi cuneatis, irregulariter serrato-dentatis, 6–9 lin. longis. *Racemi* erecti, graciles, ebracteati fere pedales, pedicellis tenuissimis omnino patentibus vel depressis. *Flores* mediocres (albi vel rosei ?); sepala basi æqualia, oblonga, obtusa; petala venosa, longe unguiculata; filamenta filiformia, exserta. *Siliqua* glabra, gracilis, inter semina leviter transverse constricta, 9–12 lin. longa, arcuatim adscendens, rostro gracili, 1 lin. longo; semina parva, cotyledonibus incumbentibus.

SOUTH MEXICO, rare near Tacubaya, common in and around the garden of the foot of Chapultepec (*Schaffner*), ditches near Tacubaya (*Bourgeau*, 18). Hb. Kew.

A very distinct species in its elegant radical leaves, long spreading or deflected pedicels, and ascending more or less curved seed-vessels.

Tribe ALYSSINEÆ.

8. VESICARIA.

Vesicaria, Lam. Ill. t. 559; Benth. et Hook. Gen. Plant. i. p. 73.

About thirty species, whereof twenty are American, chiefly in Texas and North Mexico, a few occurring in the Andes of South America; the others are natives of the south of Europe, Syria, and Persia.

1. **Vesicaria argyræa,** A. Gray, Pl. Lindh. ii. p. 146.

TEXAS.—NORTH MEXICO, near Corallitas, Chihuahua (*Thurber*), Buena Vista, Coahuila (*Gregg*), Monterey, Nuevo Leon (*Edwards*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 25). Hb. Kew.

2. **Vesicaria argentea,** Schauer, in Linnæa, xx. p. 720.

South Mexico, Zimapan (*Coulter*, 691), Mexico (*Aschenborn*). Hb. Kew.

Probably the same as *V. ludoviciana*, which has a wide range of distribution in North America.

3. **Vesicaria densiflora,** A. Gray, Pl. Lindh. ii. p. 145.

Texas and—North-east Mexico, banks of the Rio Grande.

4. **Vesicaria purpurea,** A. Gray, Pl. Wright. ii. p. 14.

Texas and—North-west Mexico, Guadalupe Pass and other localities, Sonora (*Parry*).

5. **Vesicaria recurvata,** Engelm. in A. Gray, Pl. Lindh. ii. p. 145.

Texas, Arizona.—North-west Mexico, Sonora (*Parry*).

6. **Vesicaria stenophylla,** A. Gray, Pl. Lindh. i. p. 9.

Texas, New Mexico,—and North-east Mexico, Monterey and Agua Nueva (*Gregg & Edwards*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 25½ and 26). Hb. Kew.

9. DRABA.

Draba, Linn. Gen. Plant. n. 800; Benth. et Hook. Gen. Plant. i. p. 74.

Upwards of 150 species are described; but a large proportion of them are not well defined. Bentham and Hooker think there may not be more than seventy or eighty good species. Numerous in the temperate and frigid regions of the northern hemisphere and in the Andes of Peru and Colombia, absent from New Zealand and South Africa, and rare in Chili, Fuegia, Falkland Islands, and Australia.

1. **Draba jorullensis,** H. B. K. Nov. Gen. et Sp. v. p. 78.

South Mexico, Volcan de Jorullo (*Humboldt & Bonpland*), at San Pedro, Oaxaca (*Karwinski*).

2. **Draba micrantha,** Nutt. in Torr. & Gray, Fl. N. Am. i. p. 109.

Southern States of North America to—North-west Mexico, Guadalupe Pass and Santa Cruz, Sonora (*Parry*). Hb. Kew.

3. **Draba myosotidoides,** Hemsley, Diag. Pl. Nov. pars alt. p. 18.

Annua (*Galeotti*) erecta ramosa ultrapedalis hispidulo-pilosa, pilis albidis, foliis radicalibus vix crebris lineari-lanceolatis membranaceis integerrimis, caulinis sparsis supremis parvis, racemis laxis elongatis, floribus parvis flavis longiuscule pedicellatis omnibus partibus diu persistentibus, pedicellis demum patentissimis, sepalis oblongo-ellipticis extus sparse pilosis, petalis obovatis longiuscule unguiculatis emarginatis, siliqua immatura lineari-oblonga utrinque attenuata 15–20-sperma.

Herba annua (*Galeotti*), erecta, ramosa, pedalis usque sesquipedalis, hispidulo-pilosa, pilis albidis longiusculis patentibus. *Radix* fusiformis. *Caulis* et ramuli graciliusculi, sparsifoliati. *Folia* radicalia vix crebra, lineari-lanceolata, maxima vix bipollicaria, membranacea, integerrima; caulina minora, superiora remota, linearia, semipollicaria. *Racemi* elongati, laxi. *Flores* flavi, parvi,

longiuscule pedicellati, omnes partes diu persistentes, pedicellis gracilibus demum circiter 3 lin. longis, patentissimis; sepala oblongo-elliptica, extus sparse pilosa, vix linea longa; petala obovata, emarginata, longiuscule unguiculata, sepalis paulo longiora; filamenta filiformia, glabra. *Siliqua* immatura, lineari-oblonga, utrinque attenuata, 4–5 lin. longa, 15–20-sperma.

South Mexico, peak of Orizaba, 12,000 to 13,000 feet (*Galeotti*, 4677). Hb. Kew.

4. **Draba popocatepetlensis,** Hemsley, Diag. Pl. Nov. pars alt. p. 18.

Annua (*Galeotti*) pilosa, radice fusiformi, caule 4–8-pollicari, foliis radicalibus rosulatis creberrimis lineari-lanceolatis vel oblongis nec incrassatis integerrimis, caulinis interdum paucidentatis, floribus parvis flavis dense racemoso-corymbosis, sepalis obovato-rotundatis vel ellipticis extus pilosis flavescentibus, petalis late obovatis breviter unguiculatis sepalis æqualibus vel brevioribus, filamentis filiformibus glabris, ovario ovato-oblongo hirsuto, loculis 2–3-ovulatis.

Herba annua (*Galeotti*) vel biennis, plus minusve pilis albidis longiusculis vestita. *Radix* fusiformis. *Caulis* erectus, subsimplex vel ramosus, 4–8-pollicaris. *Folia* haud crassa, radicalia rosulata, creberrima, lineari-lanceolata, 9–12 lin. longa, integerrima; caulina sursum gradatim minora, nonnulla hinc inde remote dentata. *Flores* parvi, flavi, dense racemoso-corymbosi; sepala concava, obovato-rotundata vel fere elliptica, minus quam sesquilineam longa, extus pilosa, flavescentia, vix patentia; petala obovata, apice rotundata nec emarginata, breviter unguiculata, sepalis æqualia vel breviora vel admodum evoluta paulo longiora; filamenta glabra, filiformia; ovarium pubescens, ovato-oblongum, stylo brevi, loculis 2–3-ovulatis. *Fructus* a nobis non visus.

South Mexico, Popocatepetl, 12,000 feet (*Galeotti*, 4668), the highest vegetation on Popocatepetl at the volcanic sands (*H. Christie*). Hb. Kew.

5. **Draba tolucensis,** H. B. K. Nov. Gen. et Sp. v. p. 78.

South Mexico, near the town of Toluca, 8000 feet (*Humboldt & Bonpland*), Toluca, on trachytic rock, at 13,000 to 14,000 feet (*Heller*), lake of the peak of Toluca, 12,000 feet (*Galeotti*, 4665).

Description of the flowers of *D. tolucensis*:—

Flores albi, conferti, circiter 1–1½ lin. diametro; sepalis concavis, ovato-ellipticis, apice rotundatis, extus parce pilosulis; petalis obovato-spathulatis, integerrimis, sepala vix æquantibus quam stamina paulo longioribus; filamentis filiformibus, glabris; ovario oblongo pubescente, stylo brevissimo, loculis circiter 6-ovulatis.

H. B. K. (*loc. cit.*) do not describe the flowers. The above description of flowers is from Galeotti's specimen, which agrees very well with their description as far as it goes; but the ovary is decidedly hairy, and they describe the capsule of their plant as glabrous; hence it is possible that they are different species.

6. **Draba vulcanica,** Benth. Pl. Hartw. p. 82.

Guatemala, in the crater of the Volcan de Agua (*Hartweg*). Hb. Kew.

Tribe SISYMBRIEÆ.

10. SISYMBRIUM.

Sisymbrium, Linn. Gen. Plant. n. 813; Benth. et Hook. Gen. Plant. i. p. 77.

Hooker and Bentham, *l. c.*, estimate the number of distinct species at about eighty, mostly natives of South and Central Europe, Western Asia, and Siberia, a few of

North America, from within the Arctic circle southward; very rare in the southern hemisphere. Fournier, who has since monographed the genus, describes 160 species; but he includes *Eutrema* and *Braya*, which would give an additional twenty species.

1. **Sisymbrium auriculatum,** A. Gray, Pl. Wright. i. p. 8.

TEXAS.—NORTH MEXICO.

Var. β. San Antonio de Alanzanes (*Gregg*).

2. **Sisymbrium berlandieri,** Fourn. Thèse Crucif. p. 105.

SOUTH MEXICO, near the city of Mexico (*Berlandier*, 570).

3. **Sisymbrium canescens,** Nutt. Gen. ii. p. 68.

In NORTH AMERICA from the Arctic circle to—SOUTH MEXICO, peak of Orizaba, at 12,000 feet (*Linden*, 1006), Tacubaya (*Graham*, 137).—WESTERN SOUTH AMERICA. Hb. Kew.

4. **Sisymbrium coulteri,** Hemsley, Diag. Pl. Nov. pars alt. p. 18.

Annuum elatum pilosum, caule crassiusculo vix ramoso parte inferiore dense folioso, foliis caulinis sesssilibus amplexicaulibus inferioribus lyratis intermediis dentatis superioribus integris, racemis valde elongatis, pedicellis quam flores longioribus adscendentibus, floribus parvis albis, siliquis lævibus pedicellis æquilongis polyspermis, seminibus biordinatis minute punctatis, cotyledonibus oblique incumbentibus.

Herba annua, erecta, vix ramosa, circiter bipedalis, plus minusve pilosa vel fere villosa, pilis longiusculis patentibus simplicibus. *Folia* radicalia mihi ignota; caulina omnia sessilia, amplexicaulia; inferiora lyrata, circiter 3-pollicaria, intermedia gradatim minora et minus grosse dentata; superiora integra, basi valde cordato-auriculata, lobis rotundatis. *Racemi* usque pedales, pedicellis demum 3–5 lin. longis, rectis vel leviter curvatis adscendentibus. *Flores* albi, circiter 2 lin. longi, pedicellis breviores; sepala ovato-oblonga, obtusa, extus pilosa, margine scariosa integra; petala oblonga, obtusa, brevissime unguiculata, sepalis paulo longiora; stamina inclusa, filamentis filiformibus. *Siliqua* glabra, crassiuscula, teres, circiter 4 lin. longa, erecta; semina minuta, numerosissima, biordinata, punctulata, cotyledonibus parvis, oblique incumbentibus.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 14); without locality (*Coulter*, 675). Hb. Kew.

Allied to *S. polyspermum*, Fournier, but differing in foliage, seed-vessels, &c.

5. **Sisymbrium galeottianum,** Fourn. Thèse Crucif. p. 59.

SOUTH MEXICO.

Var. α. **xerophilum.** Peak of Orizaba, at 10,000 to 11,000 feet (*Galeotti*, 4680).

Var. β. **hygrophilum.** Peak of Orizaba, at 8000 to 9000 feet (*Galeotti*, 4682); along the road to Mexico (*Virlet d'Aoust*, 564). Hb. Kew.

6. **Sisymbrium hispidulum,** Pl. et Tr. Prodr. Fl. N. Gren. i. p. 63?

Turritis hispida, DC.

MEXICO, valley of Mexico on the Zapan road (*Bourgeau*, 285).—COLOMBIA, ECUADOR. Hb. Kew.

7. **Sisymbrium hartwegianum,** Fourn. Thèse Crucif. p. 66.

Sisymbrium canescens, var. *brevipes,* Torr. & Gr.?

South Mexico, province of Mexico (*Hartweg*). Hb. Kew.

8. **Sisymbrium palmeri,** Hemsley, Diag. Pl. Nov. pars alt. p. 19.

Annuum erectum 9–12-pollicare cano-stellato-pubescens, foliis confertis obovato-spathulatis lyrato-pinnatifidis undulatis, caulinis superioribus angustioribus lanceolatis basi auriculatis, racemis multifloris elongatis, siliquis glaberrimis subtetragonis rectis vel leviter curvatis adscendentibus quam pedicelli multoties longioribus, seminibus numerosissimis irregulariter biseriatis, cotyledonibus recto-incumbentibus.

Herba annua, erecta, vix ramosa, 9–12-pollicaris, præter siliquas cano-stellato-pubescens. *Folia* conferta, obovato-spathulata, usque 3-pollicaria, lyrato-pinnatifida, undulata, caulina superiora angustiora, lanceolata, basi auriculata. *Racemi* multiflori, 4–6-pollicares, pedicellis fructiferis gracilibus, $1\frac{1}{2}$–3 lin. longis. *Flores* albi, brevissime pedicellati, $1\frac{1}{2}$–2 lin. longi; sepala oblonga, obtusiuscula; petala spathulato-oblonga, sepalis paulo longiora; ovarium glabrum, stigmate fere sessili. *Siliqua* glaberrima, subtetragona, 8–12 lin. longa, recta vel leviter curvata, adscendens; semina numerosissima (in utroque loculo circiter 50) irregulariter biseriata, cotyledonibus recto-incumbentibus.

North Mexico, region of San Luis Potosi, 6000 to 7000 feet (*Parry & Palmer*, 13). Hb. Kew.

Var.? **elatior.**

Tota planta minus pubescens, caule usque tripedali, foliis caulinis vix basi auriculatis.

South Mexico, valley of Mexico (*Schaffner*, 21). Hb. Kew.

9. **Sisymbrium parryi,** Hemsley, Diag. Pl. Nov. pars alt. p. 19.

Annuum elatum albo-stellato-pubescens, foliis obovato-oblongis oblanceolatisve remote grosse dentatis, radicalibus petiolatis, caulinis sessilibus amplexicaulibus, racemis valde elongatis multifloris, floribus parvis albis quam pedicelli brevioribus, siliquis glaberrimis inflatis quam pedicelli haud duplo longioribus, stylo longiusculo, seminibus biseriatis, cotyledonibus recto-incumbentibus.

Herba annua, erecta, vix ramosa, circiter bipedalis, tota præter siliquas albo-stellato-pubescens. *Folia* obovato-oblonga vel oblanceolata, 2–3-pollicaria, remote et grosse dentata; radicalia petiolata, caulina sessilia, basi auriculata et amplexicaulia. *Racemi* graciles, multiflori, pedales usque sesquipedales; pedicelli fructiferi gracillimi patentissimi, circiter 3 lin. longi. *Flores* albi, 2–3 lin. longi; sepala oblonga; petala obovato-spathulata, sepalis fere dimidio longiora; filamenta filiformia. *Siliqua* glaberrima, subinflata, 4–6 lin. longa, adscendens; semina numerosa (in utroque loculo plusquam 25), biseriata, cotyledonibus recte incumbentibus.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 15). Hb. Kew.

10. **Sisymbrium patulum,** Fourn. Thèse Crucif. p. 104.

South Mexico, around the city of Mexico (*Berlandier*, 833, in part.). Hb. Paris.

11. **Sisymbrium polyspermum,** Fourn. Thèse Crucif. p. 103.

North Mexico, province of San Luis de Potosi (*Virlet d'Aoust*, 570). Hb. Paris.

12. **Sisymbrium schaffneri,** Hemsley, Diag. Pl. Nov. pars alt. p. 19.

Annuum elatum ramosum stellato-pubescens, caule ramisque gracilibus, foliis caulinis linearilanceolatis remote dentatis vel integris basi attenuatis, racemis numerosis densifloris, floribus (flavis?) minimis brevissime pedicellatis, siliquis teretibus gracilibus quam pedicelli multoties longioribus, seminibus uniseriatis, cotyledonibus incumbentibus.

Herba annua, erecta, ramosa, circiter bipedalis, tota breviter stellato-pubescens scabridula, caule ramisque gracilibus. *Folia* radicalia non visa; caulina sessilia, lineari-lanceolata, maxima, 2–3-pollicaria, remote dentata vel integra, basi attenuata. *Racemi* densi, terminales 6–9-pollicares, laterales breviores patentes, pedicellis demum 1–1½ lin. longis. *Flores* (flavi?) fere sessiles, circiter 1 lin. longi; sepala ovato-oblonga, obtusa; petala obovata, sepalis vix longiora; filamenta filiformia. *Siliqua* teres, gracilis, aspera, 5–7 lin. longa, patens; semina uniseriata, cotyledonibus recte incumbentibus.

North Mexico, region of San Luis de Potosi, 6000 to 8000 feet (*Parry & Palmer*, 12); South Mexico, around Belen (*Schaffner*, 2), Zimapan (*Coulter*, 680). Hb. Kew.

Remarkable for its slender branching habit, minute flowers, and slender rough seed-vessels.

13. **Sisymbrium streptocarpum,** Fourn. Thèse Crucif. p. 58.

South Mexico, on the walls of the Aqueduct of Tacubaya (*Bourgeau*, 9), around the city of Mexico (*Berlandier*, 782), Jalapa (*Coulter*, 683). Hb. Kew.

14. **Sisymbrium virletii,** Fourn. Thèse Crucif. p. 62.

South Mexico, valley of the Maiz (*Virlet d'Aoust*). Hb. Paris.

11. ERYSIMUM.

Erysimum, Linn. Gen. Plant. n. 814; Benth. et Hook. Gen. Plant. i. p. 79.

Upwards of 100 forms have been described as species; but Hooker and Bentham express a doubt whether there are more than fifteen or twenty really distinct species. They are chiefly natives of the south of Europe, of Central Asia, and North America, from the Arctic regions to Mexico.

1. **Erysimum asperum,** DC. Syst. ii. p. 505.

Oregon and Missouri to—South Mexico, Zimapan (*Coulter*, 688), Chihuahua and Sonora (*Torrey*). Hb. Kew.

2. **Erysimum sp.** (*E. mexicanum*, Fournier, MSS. in Hb. Paris).

South Mexico, Montezuma near Cuantepec (*Bourgeau*, 1048). Hb. Paris.

3. **Erysimum macradenium,** Gay, Erys. Monogr. p. 8.

South Mexico, crater of the peak of Toluca, 12,000 to 13,000 feet, and Real del Monte, 8000 feet (*Galeotti*, 4665 and 4672); Mexico (*Andrieux*, 534). Hb. Kew.

4. **Erysimum tilimi,** Gay, Erys. Monogr. p. 10.

South Mexico, around Toluca, where it is called "Tilimi" (*Andrieux*, 535), Desierto Viejo, valley of Mexico (*Bourgeau*, 761). Hb. Kew.

5. **Erysimum sp.?** (floribus atropurpureis).
SOUTH MEXICO, Chiapas (*Ghiesbreght*, 817). Hb. Kew.

12. SYNTHLIPSIS.

Synthlipsis, A. Gray, Pl. Fendl. p. 116, in adnot.; Benth. et Hook. Gen. Plant. i. p. 93.

The genus is at present limited to the species here enumerated.

1. **Synthlipsis berlandieri,** A. Gray in Torr. Bot. Emory's Exped. p. 34.
NORTH MEXICO, Matamoras (*Berlandier*, 710, 778, 1517, 2127, 2198, 3017, 3102). Hb. Kew.

2. **Synthlipsis greggi,** A. Gray, *l. c.*
NORTH MEXICO, Saltillo, Coahuila (*Gregg*, *Berlandier*, 822, 2231, 2242), region of San Luis Potosi, 6000 to 7000 feet (*Parry & Palmer*, 18). Hb. Kew.

13. GREGGIA.

Greggia, A. Gray, Pl. Wright. i. p. 8, t. 1; Benth. et Hook. Gen. Plant. i. p. 80.

G. camporum is the only species.

1. **Greggia camporum,** A. Gray, Pl. Wright. i. p. 9, t. 1.
TEXAS and NEW MEXICO to—NORTH MEXICO, Chihuahua and west of Parras, Coahuila (*Gregg*), San Luis Potosi to San Antonio (*Parry*, 17). Hb. Kew.

Tribe BRASSICEÆ.

[*Brassica sativa*, Linn., *Sinapis arvensis*, Linn., and *Eruca sativa*, Lam., have been collected by Bourgeau and others; but they are introduced plants.]

Tribe LEPIDINEÆ.

14. LEPIDIUM.

Lepidium, Linn. Gen. Plant. n. 801; Benth. et Hook. Gen. Plant. i. p. 87.

From sixty to eighty or more species, widely dispersed in temperate and warm regions; some are littoral in the South-Sea Islands. None are arctic or alpine.

1. **Lepidium alyssoides,** A. Gray, Pl. Fendl. p. 10.
CALIFORNIA to—NORTH MEXICO, Santa-Cruz valley, Sonora (*Thurber*), San Luis Potosi to San Antonio (*Parry*, 20). Hb. Kew.

2. **Lepidium humboldtii,** DC. Syst. ii. p. 532.
Senebiera dubia, H. B. K.
SOUTH MEXICO, at the foot of the Volcan de Orizaba (*Humboldt & Bonpland*).

3. **Lepidium intermedium,** A. Gray, Pl. Wright. ii. p. 15.
NEW MEXICO, TEXAS.—NORTH MEXICO, region of San Luis Potosi (*Parry & Palmer*, 22). Hb. Kew.

4. **Lepidium latifolium,** Linn. Sp. Plant. p. 899.

TEMPERATE EUROPE and WEST ASIA, introduced into—SOUTH MEXICO, near Toluca (*Andrieux*), valley of Mexico (*Bourgeau*, 12), Chapoltepec (*Graham* &c.). Hb. Kew.

5. **Lepidium menziesii,** DC. Prod. i. p. 205.

WESTERN COAST of NORTH AMERICA to—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry and Palmer*, 21); SOUTH MEXICO, San Angel (*Bourgeau*, 13). Hb. Kew.

6. **Lepidium montanum,** Nutt. in Torr. & Gray, Fl. N. Am. i. p. 116.

NEW MEXICO, CALIFORNIA, and—NORTH MEXICO, Chiricahui Mountains, Sonora (*Wright*).

7. **Lepidium virginicum,** Linn. Sp. Plant. p. 900.

Senebiera mexicana, Hook. et Arn.

Widely dispersed in temperate NORTH AMERICA and extending to—MEXICO, Zacatecas (*Coulter*, 686), roadsides near the city of Mexico (*Bourgeau*, 14), Ciudad Real (*Linden*); GUATEMALA, on walls (*Bernoulli*). Hb. Kew.

15. CAPSELLA.

Capsella, Mœnch. ex DC. Syst. Veg. ii. p. 383; Benth. et Hook. Gen. Plant. i. p. 86.
Hymenolobus, Nutt.

About eight species, widely dispersed in both hemispheres. *C. bursa-pastoris* is almost ubiquitous.

1. **Capsella** (§ **Hymenolobus**) **mexicana,** Hemsley, Diag. Pl. Nov. pars alt. p. 19.

Erecta nana ramosa sparse pilosa, foliis caulinis alte pectinato-pinnatifidis, lobis angustis apice aristatis, floribus minutis dense racemosis breviter pedicellatis, siliqua oblongo-elliptica hispido-pilosa polysperma.

Herba annua, erecta, dense ramosa, sparse pilosa in spec. nostro infra 6-pollicaris, ramis gracilibus. *Folia* caulina alte pectinato-pinnatifida vel interdum subbipinnatifida, 4–8 lin. longa, lobis angustis, apice aristatis. *Flores* minuti, dense racemosi; pedicellis vix 1 lin. longis; sepala oblonga, basi æqualia; petala linearia vel interdum nulla; filamenta filiformia; stylus brevis, stigmate capitato. *Siliqua* oblongo-elliptica, 2–3 lin. longa, hispidulo-pilosa, lateraliter compressa, valvis naviculiformibus; semina minuta, numerosa, in quoque loculo biseriata, cotyledonibus incumbentibus, radiculæ conformibus.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 19). Hb. Kew.

16. SPHÆROCARDAMUM.

Sphærocardamum, Schauer in Linnæa, xx. p. 720; Benth. et Hook. Gen. Plant. i. p. 83.

The following is the only species described:—

1. **Sphærocardamum nesliæforme,** Schauer in Linnæa, xx. p. 721.

MEXICO (*Aschenborn*, 209).

Tribe THLASPIDEÆ.

17. BISCUTELLA.

Biscutella, Linn. Gen. Plant. n. 808; Benth. et Hook. Gen. Plant. i. p. 91.

Several Mediterranean species and one Californian besides the following:—

1. **Biscutella (Dithyrea) Wislizeni,** Engelm. Bot. Wisliz. Exped. p. 11, adnot.

TEXAS.—NORTH MEXICO, common along the valley of the Rio Grande del Norte.

18. THLASPI.

Thlaspi, Linn. Gen. Plant. n. 802; Benth. et Hook. Gen. Plant. i. p. 91.

About thirty species, inhabiting temperate and frigid regions, chiefly in the northern hemisphere. Rare in South America and Australia; absent from South Africa.

1. **Thlaspi Fendleri,** A. Gray, Pl. Wright. ii. p. 15.

TEXAS.—NORTH MEXICO, Guadalupe Pass, Sonora (*Parry*).

Tribe ISATIDEÆ.

19. THYSANOCARPUS.

Thysanocarpus, Hook. Fl. Bor.-Am. i. p. 69; Benth. et Hook. Gen. Plant. i. p. 94.

About six species, inhabiting Oregon and California, one occurring in Guadalupe Island.

1. **Thysanocarpus curvipes,** Hook. Fl. Bor.-Am. i. p. 69, t. 18.

Thysanocarpus pulchellus et *elegans,* Fisch. et Mey. Ind. Sem. Hort. Petr. 1835, p. 50; Hook. Ic. Pl. t. 39.

CALIFORNIA and NEW MEXICO to—NORTH MEXICO, Sonora (*Parry*).

Tribe CAKILINEÆ.

20. CAKILE.

Cakile, Gærtn. Fruct. ii. p. 287, t. 141; Benth. et Hook. Gen. Plant. i. p. 99.

Two species—one confined to Europe, and the other widely dispersed.

1. **Cakile maritima,** Scop. Fl. Carniol. n. 844; DC. Prodr. i. p. 185.

Cakile americana, Nutt.

On the eastern coast and shores of the great lakes of North America from NEWFOUNDLAND and MASSACHUSETTS, southward to—SOUTH MEXICO, Barra de Tuspan (*Berlandier,* 86), Campeche? (*Linden*).—Also in EUROPE; and Phillip Island, AUSTRALIA. Hb. Kew.

[*Raphanus raphanistrum,* Linn., is naturalized in Mexico, and occurs in the collections of many travellers.]

Order X. CAPPARIDEÆ.

Capparideæ, Benth. et Hook. Gen. Plant. i. p. 103.

Shrubs, annual herbs, or rarely trees. About twenty-four genera and 300 species, natives of warm and tropical regions, and most abundant in America.

Tribe CLEOMEÆ.

1. CLEOME.

Cleome, Linn. Gen. Plant. n. 826; Benth. et Hook. Gen. Plant. i. p. 105.

Shrubs or annual herbs. About seventy species, dispersed over nearly all warm and tropical countries, most numerous in America and the countries bordering on the Red Sea.

1. **Cleome cardinalis,** DC. Prod. i. p. 238.

MEXICO, called "Borla de Cardinal" by the natives.

2. **Cleome (§ Physostemon) mexicana,** Hemsley, Diag. Pl. Nov. pars alt. p. 20.

Annua nana strigillosa, ramis gracilibus, foliis simplicibus linearibus mucronatis, floribus parvis solitariis axillaribus, pedicellis foliis æquilongis, capsulis deltoideis, seminibus 4 rugosis tuberculatis.

Herba annua, strigillosa, erecta, 3–4-pollicaris, jam a basi ramosa, ramis gracilibus angulatis. *Folia* simplicia, linearia, circiter pollicaria, aculeato-mucronata. *Flores* rosei vel flavi, vix 3 lin. longi, axillares, solitarii, pedicellati, pedicellis filiformibus, ebracteatis, foliis æquilongis; sepala lineari-lanceolata, acuta, petalis breviora; petala obovata, anguste unguiculata; stamina 6, 2 superiorum filamentis infra antheram inflatis; ovarium breviter stipitatum, stylo elongato filiformi. *Capsula* deltoidea vel late rotundato-ovata, circiter 4 lin. diametro, stylo filiformi indurato coronata; semina 4, rugosa, tuberculata.

SOUTH MEXICO, dunes on the Pacific coast, Oaxaca (*Galeotti*, 3194). Hb. Kew.

3. **Cleome multicaulis,** DC. Prod. i. p. 240; Calques des Dess. Fl. Mex. 20.

MEXICO.

4. **Cleome polygama,** Linn. DC. Prod. i. p. 241.

SOUTH MEXICO, near Campeche (*Humboldt & Bonpland*), near Tantoyuca (*Ervendberg*); PANAMA (*Duchassaing*).—Also common in JAMAICA and COLOMBIA. Hb. Kew.

5. **Cleome pubescens,** Sims, Bot. Mag. t. 1857.

PANAMA (*Duchassaing*).

6. **Cleome sonoræ,** A. Gray, Pl. Wright. ii. p. 16.

COLORADO.—NORTH MEXICO, Chiricahui Mountains, Sonora (*Wright*).

7. **Cleome speciosissima,** Deppe, Bot. Reg. t. 1312.

SOUTH MEXICO, Jalapa (*Deppe*).

8. **Cleome sp.** (affinis *C. heptaphyllæ*).
GUATEMALA, Volcan de Fuego (*O. Salvin*). Hb. Kew.

9. **Cleome sp.**
NICARAGUA, Greytown (*Tate*). Hb. Kew.

2. CLEOMELLA.

Cleomella, DC. Prodr. i. p. 237; Benth. et Hook. Gen. Plant. i. p. 105.

Annual herbs. Six species, natives of Tropical and Subtropical North America.

1. **Cleomella angustifolia,** Torr. in A. Gray, Pl. Wright. i. p. 11, adnot.
NORTH MEXICO, gravelly places near Presidio del Norte (*Bigelow*).

2. **Cleomella longipes,** Torr. in A. Gray, Pl. Wright. i. p. 11.
TEXAS; NEW MEXICO; CALIFORNIA.—NORTH MEXICO, Saline Plains, Sonora (*Thurber & E. R. Smith*), Chiricahui Mountains (*Wright*), San Pablo, Chihuahua, and near San Luis Potosi (*Gregg*). Hb. Kew.

3. **Cleomella mexicana,** DC. Prodr. i. p. 237; Calques des Dess. Fl. Mex. 19 and xxxi. A; Hooker's Ic. Pl. t. 28.
TEXAS to—SOUTH MEXICO, Jalapa to Real del Monte (*Coulter*), near the City of Mexico (*Galeotti*, 7216), between Vera Cruz and the city of Mexico (*Halsted*). Hb. Kew.

3. POLANISIA.

Polanisia, Rafin. ex DC. Prodr. i. p. 242; Benth. et Hook. Gen. Plant. i. p. 106.

Annual herbs, natives of tropical and subtropical regions. About fourteen species, one of which occurs in warm countries all round the world.

1. **Polanisia graveolens,** Raf. in DC. Prodr. i. p. 242.
SOUTHERN STATES of NORTH AMERICA to—MEXICO (*Aschenborn*, 425).

2. **Polanisia trachysperma,** Torr. & Gr. Fl. N. Am. i. p. 669; Gray, Gen. Ill. t. 79.
TEXAS to—SOUTH MEXICO, in the province of Puebla (*Andrieux*, 532). Hb. Kew.

3. **Polanisia uniglandulosa,** Cav. DC. Prodr. i. p. 243.
TEXAS, NEW MEXICO, and CALIFORNIA to—SOUTH MEXICO, Monterey, Nuevo Leon (*Edwards & Eaton*), Zimapan (*Coulter*, 673), Mexico (*Ehrenberg*), Puebla (*Andrieux*, 532). Hb. Kew.

4. GYNANDROPSIS.

Gynandropsis, DC. Prodr. i. p. 237; Benth. et Hook. Gen. Plant. i. p. 106.

Annual herbs, growing in tropical regions. There are about ten species, some of them having a very wide range of distribution.

1. **Gynandropsis speciosa,** DC. Prodr. i. p. 238.

Cleome speciosa, H. B. K. Nov. Gen. et Sp. v. p. 84, t. 436.

South Mexico, ravines at 3000 feet, Vera Cruz (*Galeotti*), without localities (*Jurgensen, Botteri, Andrieux*, and others); Guatemala (*Friedrichsthal*); Costa Rica, dry declivities in primeval forests (*Polakowsky*).—Ecuador; Peru; Guiana. Hb. Kew.

A native of tropical and subtropical Africa and Asia, probably introduced into the New World.

5. WISLIZENIA.

Wislizenia, Engelm. Bot. Wisliz. Exped. p. 15, in not.; Benth. et Hook. Gen. Plant. i. p. 106.

Annual herbs. Only one other species besides the following; a native of California.

1. **Wislizenia refracta,** Engelm. in Bot. Wisliz. Rep. 14; A. Gray, Pl. Wright. i. p. 11, t. 2.

Cleomella coulteri, Harv.

New Mexico; California; Colorado.—North Mexico, Sonora (*Thurber*), Sonora Alta (*Coulter*, 670). Hb. Kew.

Tribe CAPPAREÆ.

6. CAPPARIS.

Capparis, Linn. Gen. Plant. n. 643; Benth. et Hook. Gen. Plant. i. p. 108.

Trees or shrubs, often climbing, natives of tropical and subtropical regions in both hemispheres, not extending north of Mexico in America. About 120 species are known.

1. **Capparis amplissima,** Lam. Dict. i. p. 607; Burm. Ed. Plum. t. 73. fig. 2.

South Mexico.—Trinidad. Hb. Lambert.

Grisebach refers this to *C. verrucosa*, Jacq.

2. **Capparis angustifolia,** H. B. K. Nov. Gen. et Sp. v. p. 96, t. 438.

South Mexico, in the Cañada de Zopilote, between Mexico and Acapulco, at 3100 feet (*Humboldt & Bonpland*).

3. **Capparis amygdalina,** Lam. Dict. i. p. 608; Br. Hist. Jam. t. 27. fig. 2; Jacq. Amer. t. 152.

Capparis breynia, Jacq., not of DC.

Mexico, Oaxaca (*Galeotti*, 7196, *Liebmann*), neighbourhood of Campeche, Yucatan (*Linden*, 999).—Tropical S. America and West Indies. Hb. Kew.

4. **Capparis avicenniæfolia,** H. B. K. Nov. Gen. et Sp. v. p. 94. (*Colicodendron*, Seem.; *Beautempsia*, Gaud. Voy. de la 'Bonite,' t. 57.)
PANAMA, Darien (*Barclay*).—Southward to PERU. Hb. Kew.

5. **Capparis asperifolia,** Presl, Reliq. Hænk. ii. p. 86.
SOUTH MEXICO, at the port and town of Acapulco (*Hænke*).

6. **Capparis brevisiliqua,** DC. Prodr. i. p. 251; Calques des Dess. Fl. Mex. 27.
MEXICO (*Moçino & Sessé*).

7. **Capparis brevipes,** Benth. Bot. Voy. Sulph. p. 65.
COSTA RICA, Gulf of Nicoya.

8. **Capparis cynophallophora,** Linn. Sp. Pl. p. 721; Jacq. Am. t. 98.
PANAMA, between the Rio Grande and Panama City (*Seemann*).—TROPICAL SOUTH AMERICA and WEST INDIES.

9. **Capparis frondosa,** Jacq. Am. p. 162, t. 104.
GUATEMALA, without any special locality (*Friedrichsthal*).—WEST INDIES and NORTHERN part of SOUTH AMERICA. Hb. Kew.

10. **Capparis frondosa?**
PANAMA, Lion-Hill railway-station (*S. Hayes*). Hb. Kew.

11. **Capparis furfuracea,** Ruiz & Pavon in Hb. Lambert; DC. Prodr. i. p. 252.
MEXICO.

12. **Capparis incana,** H. B. K. Nov. Gen. et Sp. v. p. 94.
SOUTH MEXICO, between Mescala and Estola, 1800 feet (*Humboldt & Bonpland*).

13. **Capparis karwinskiana,** Schl. in Linnæa, x. p. 237.
SOUTH MEXICO, at San Bartolo (*Karwinski*).

14. **Capparis "karwinskiana,** Schl. *proxima sed sepala longiora.*"
SOUTH MEXICO, Oaxaca (*Galeotti*, 7188). Hb. Kew.

15. **Capparis odoratissima,** Jacq. Hort. Schœnb. t. 110; DC. Prodr. i. p. 251.
Capparis intermedia, H. B. K.; *C. torulosa,* Griseb., not of Sw.
GUATEMALA (*Friedrichsthal*); COSTA RICA (*Endres*, 222); PANAMA, Taboga (*S. Hayes*, 685).—Northern parts of SOUTH AMERICA and WEST INDIES. Hb. Kew.

16. **Capparis pauciflora,** Presl, Reliq. Hænk. ii. p. 86.
SOUTH MEXICO, western coast (*Hænke*).

17. **Capparis subbiloba,** H. B. K. Nov. Gen. et Sp. v. p. 89.
Colicodendron subbilobum, Seem.
PANAMA, Volcan de Chiriqui (*Seemann*).—COLOMBIA. Hb. Kew.

18. **Capparis verrucosa,** Jacq. Pl. Am. t. 99?

South Mexico, Mazatlan (*Coulter*, 669); Guatemala (*Friedrichsthal*).—Colombia, Venezuela, Trinidad, Jamaica, &c. Hb. Kew.

7. CRATÆVA.

Cratæva, Linn. Gen. Plant. n. 599; Benth. et Hook. Gen. Plant. i. p. 110.

Shrubs or trees. Six species, spread all over the tropics.

1. **Cratæva gynandra,** Linn. Sp. Pl. 636; H. B. K. Nov. Gen. et Sp. v. p. 86.

South Mexico, between Acatlan and Chila, Puebla (*Andrieux*, 533), province of Mexico (*Hahn*).—West Indies and Tropical S. America to Brazil. Hb. Kew.

2. **Cratæva tapia,** Linn. Hb., not of Sp. Pl.; Vahl, Fl. Flum. v. t. 3.

Cratæva acuminata, DC.; *Cleome arborea,* Schrad.

South Mexico, Acapulco (*Lay.*), Mazatlan (*Seemann*). Hb. Kew.

8. TOVARIA.

Tovaria, Ruiz et Pav. Prodr. p. 49, t. 8; Fl. Peruv. iii. p. 73, t. 306; Benth. et Hook. Gen. Plant. i. p. 110.

One species, an annual herb. This genus is referred to the Papaveraceæ by Eichler.

1. **Tovaria pendula,** Ruiz & Pavon, Fl. Peruv. iii. p. 373, t. 309; Hook. Ic. Pl. t. 664.

Costa Rica, without locality (*Endres*).—West Indies, Guiana, States of Colombia, and Peru. Hb. Kew.

9. FORCHAMMERIA.

Forchammeria, Liebm. in Vidensk. Meddel. 1853, p. 93.

One arboreous species of doubtful affinity.

1. **Forchammeria pallida,** Liebm. in Vidensk. Meddel. 1853, p. 93.

South Mexico, in dry sunny woods on the Pacific coast between Tehuantepec and Mazatlan, Oaxaca (*Liebmann*).

Bentham and Hooker ('Genera Plantarum,' i. p. 104) exclude this from the Capparideæ, and refer it doubtfully to the Euphorbiaceæ.

Order XI. RESEDACEÆ.

Resedaceæ, Benth. et Hook. Gen. Plant. i. p. 110.

Annual and perennial herbs, rarely shrubby. Müller, in his monograph of the family, enumerates nearly sixty species; but Bentham and Hooker think it doubtful

whether there are more than thirty distinct species, belonging to six genera. They are chiefly natives of the countries bordering the Mediterranean Sea; a few extend to India, two or three to South Africa, and one to America.

1. OLIGOMERIS.

Oligomeris, Cambess. in Jacquem. Voy. Bot. xxiii. t. 25; Benth. et Hook. Gen. Plant. i. p. 112.

Herbaceous or half-shrubby plants. Besides the following, there are three South-African species.

1. **Oligomeris subulata,** Boiss. ex Müll. in DC. Prodr. xvi. pars 2, p. 587.

Oligomeris glaucescens, Camb. Jacquem. Voy. iv. p. 24, t. 25.
Ellimia ruderalis, Nutt.

Widely dispersed in the Old World from India through the Mediterranean region to the Canary Islands; and in America it has been found in NEW MEXICO, CALIFORNIA, GUADALUPE ISLAND, and—NORTH MEXICO, valley between the Saledo and Lake Santa Maria, Chihuahua (*Wright*), Bolson de Mapimi (*Gregg*).

Hooker and Bentham (Gen. Plant. i. p. 112) think this was probably introduced into America; Watson ('Botany of California,' i. p. 53) says, "seemingly indigenous to North America."

[*Reseda luteola,* Linn., was collected by Heller at Toluca, 6000 feet, and by Bourgeau near Mexico; but there is no doubt that this is an introduced plant.]

Order XII. CISTINEÆ.

Cistineæ, Benth. et Hook. Gen. Plant. i. p. 112.

Herbs, under-shrubs, or shrubs. There are four genera, comprising about sixty well-defined species, though nearly 200 have been described in books. They are most abundant in the Mediterranean region, rare in Central and Eastern Asia; a few in the Atlantic States of North America and in Mexico, one on the Pacific coast of North America, and two or three in South America.

1. LECHEA.

Lechea, Linn. Gen. Plant. n. 109; Benth. et Hook. Gen. Plant. i. p. 114.

Herbs or under-shrubs. Three or four species, natives of North and Central America.

1. **Lechea skinneri,** Benth. Bot. Voy. Sulph. p. 66.

Helianthemum tripetalum, Moç. et Sessé, DC. Prodr. i. p. 284; Calques des Dess. Fl. Mex. 47 and iii. D.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer,* 31); GUATEMALA (*Skinner*). Hb. Kew.

2. HELIANTHEMUM.

Helianthemum, Pers. Syst. ii. p. 75; Benth. et Hook. Gen. Plant. i. p. 113.

Herbs or under-shrubs. Nearly 150 forms have been described as species; but these Bentham and Hooker would reduce to about thirty, whereof six or more are natives of North and Central America, one (or three?) of South America, and nearly all the others of the Mediterranean region, a few extending to other parts of Europe and Western Asia.

1. **Helianthemum arenicola,** Chapm. Fl. S. U. States, p. 35.

FLORIDA.—MEXICO, Zimapan (*Coulter*, 743), Chinantla (*Liebmann*). Hb. Kew.

2. **Helianthemum argenteum,** Hemsley, Diag. Pl. Nov. pars alt. p. 20.

Fruticosum nanum dense ramosum, ramis tenuibus sinuosis, foliis parvis alternis argenteo-pubescentibus lineari-lanceolatis crassiusculis confertis vix patentibus, floribus dimorphis vel fortasse trimorphis longiuscule pedicellatis vel fere sessilibus.

Frutex dense et tortuose ramosus, 3–4 poll. altus, ramis tenuibus sinuosis. *Folia* alterna, conferta, vix patentia, lineari-lanceolata, 2–3 lin. longa, semilineam lata, mucronata, utrinque argenteo-pubescentia, crassiuscula. *Flores* dimorphi vel fortasse trimorphi, perfecti non visi, longiuscule pedicellati vel fere sessiles, apetali vel petaliferi, petaliferis imperfectis, circiter 6 lin. diametro; sepala persistentia, argenteo-pubescentia; petala flava aut nulla aut 3 vel 4 in spec. nostris, obovata, interdum 1 vel 2 eorum inæqualiter biloba, $2\frac{1}{2}$ lin. longa; stamina circiter 12, filamentis sursum leviter dilatatis; ovarium glabrum, circiter 8–10-ovulatum. *Capsula* immatura trisperma, seminibus deltoideis.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 29). Hb. Kew.

3. **Helianthemum astylum,** Moç. et Sessé in DC. Prodr. i. p. 284.

MEXICO (*Moçino*).

This was probably founded upon one of the states of *H. glomeratum*.

4. **Helianthemum canadense,** Michx. Fl. Am. Bor. i. p. 308?

SOUTH MEXICO, Llanos de Perote, Vera Cruz (*Schiede & Deppe*).

This is on the authority of Schlechtendal, and it is most likely *H. glomeratum*.

True *H. canadense* ranges, according to Chapman ('Flora of the Southern United States,' p. 36), from Florida northward to Canada.

5. **Helianthemum glomeratum,** Lag. DC. Prodr. i. p. 269.

Cistus glomeratus, Lag. Gen. et Sp. p. 16.
Helianthemum polifolium, Hook. et Arn., non A. Gray.
Heteromeris mexicana, Spach.
Lechea mexicana, Walp.
Tæniostema micranthum, Spach.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 28), Sierra Madre (*Seemann*, 2143), Tepic (*Barclay*); SOUTH MEXICO, valley of Mexico

(*Bourgeau*, 695, 696, *& Schaffner*, 31), Cordillera of Oaxaca, 5000 to 6000 feet (*Galeotti*, 715), Toluca (*Andrieux*, 528), without localities (*Sallé*, *Parkinson*, &c.). Hb. Kew.

Like *H. canadense*, this is an exceedingly polymorphic plant.

6. **Helianthemum obcordatum,** Moç. et Sessé, in DC. Prodr. i. p. 284.

Mexico (*Moçino & Sessé*).

Probably the same as *H. glomeratum*.

7. **Helianthemum patens,** Hemsley, Diag. Pl. Nov. pars alt. p. 20.

Fruticosum nanum diffusum puberulum, ramis gracilibus rectis, foliis parvis appressis omnibus alternis ovato-lanceolatis oblongisve, floribus longe pedicellatis, pedicellis gracilibus patentissimis extraaxillaribus, petalis 5 quorum 2 inæqualiter (an semper?) biloba, staminibus circiter 12, filamentis filiformibus, seminibus conoideis punctulatis.

Frutex ramosus, diffusus, 2–4-pollicaris, puberulus, ramis gracilibus. *Folia* omnia alterna, appressa, ovato-lanceolata vel oblonga, 2–4 lin. longa, utrinque stellato-pubescentia. *Flores* flavi, longe pedicellati, circiter 8–10 lin. diametro, pedicellis gracillimis, patentissimis, extraaxillaribus, 4–8 lin. longis; sepala albo-pubescentia; petala 5, quorum 2 (an semper?), inæqualiter biloba; stamina circiter 12, filamentis filiformibus; ovarium glabrum, multiovulatum. *Semina* conoidea, minute punctulata, embryone convoluto viridi.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 30). Hb. Kew.

Order XIII. VIOLARIEÆ.

Violarieæ, Benth. et Hook. Gen. Plant. i. p. 114.

Herbs or shrubs, dispersed over nearly all except frigid countries; the herbaceous species are found chiefly in temperate regions, and the shrubby in tropical regions. About 250 species, belonging to twenty-two genera.

Tribe VIOLEÆ.

1. CORYNOSTYLIS.

Corynostylis, Mart. Nov. Gen. et Sp. Pl. Bras. i. p. 25; Benth. et Hook. Gen. Plant. i. p. 116.

Calyptrion, Ging. Climbing shrubs. Two or three species, restricted to America.

1. **Corynostylis berterii,** Spreng.

Calyptrion berterii, Ging., DC. Prodr. i. p. 289.

Var. *β. mexicana,* loc. cit. et Calques des Dess. Fl. Mex. 38.

Mexico (*Moçino & Sessé*).

Hooker (Bot. Mag. sub t. 5960) gives it as his opinion that the genus consists of one variable species; but the flowers of the Mexican plant figured as above have a very wide inflated throat, and there is also a very distinct plant in Hb. Kew from Angostura.

2. **Corynostylis hybanthus,** Mart. et Zucc. Nov. Gen. et Sp. Pl. Bras. i. p. 26, t. 17 et 18; Bot. Mag. t. 5960.

Calyptrion aubletii, Ging.

Mexico, Yucatan and Tabasco (*Johnson*); Guatemala (Hooker, Bot. Mag. t. 5960).—States of Colombia, North Brazil, and in St. Vincent. Hb. Kew.

2. SCHWEIGGERA.

Schweiggera, Spreng. Neue Entd. ii. p. 167; Benth. et Hook. Gen. Plant. i. p. 117.

Erect shrubs, 2 species—1 Brazilian, and 1 Mexican.

1. **Schweiggera mexicana,** Schl. in Linnæa, xii. p. 204.

Mexico (*Hb. Lehmann*).

3. VIOLA.

Viola, Linn. Gen. Plant. n. 1007; Benth. et Hook. Gen. Plant. i. p. 117.

Herbs, rarely shrubby. About 100 species, whereof sixty are found in the northern hemisphere, thirty in South America, chiefly in the mountains, two or three in South and Eastern Africa, and eight in Australia and New Zealand.

1. **Viola barroetana,** Schaffner, MSS. in hb. Parry; Hemsley, Diag. Pl. Nov. pars alt. p. 20.

Acaulescens parva glaberrima vel minutissime papillosa nitida, foliis longe graciliterque petiolatis ovato-oblongis obscure calloso-denticulatis, stipulis scariosis adnatis fimbriatis, pedunculis quam folia longioribus, bracteis scariosis sparse fimbriatis, floribus flavis parvis, petalis obovatis integris 2 lateralibus intus basin versus barbatis, stylo basi curvato clavato, stigmate hirsuto.

Herba perennis, acaulescens. *Folia* longe graciliterque petiolata, glaberrima, nitida vel minutissime papillosa, lamina ovato-oblonga, 6–9 lin. longa, obscure calloso-denticulata, petiolo 1–1½-pollicari; stipulæ adnatæ, scariosæ, sparse dentatæ vel fimbriatæ. *Pedunculi* uniflori, foliis paulo longiores, bracteis infra medium insertis scariosis linearibus paucidentatis vel fimbriatis. *Flores* flavi, circiter 9 lin. diametro; sepala inæqualia, lineari-oblonga vel lineari-lanceolata, obtusa vel subacuta; petala fere æqualia, obovata, integra, 2 lateralia intus infra medium barbata, 3 inferiora nigro lineata; stamina sessilia, antherarum appendicibus parvis cucullatis; ovarium glabrum, stylo clavato, basi curvato, stigmate hirsuto.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer,* 35). Hb. Kew.

2. **Viola ciliata,** Schl. in Linnæa, xii. p. 202.

South Mexico, Jalapa (*Schiede*), Ciudad Real, Chiapas (*Linden,* 1082), Vera Cruz (*Galeotti,* 4499, *Müller,* 1354), Orizaba, Jacale, 10,000 feet (*Heller*). Hb. Kew.

"Videtur eadem species ac *V. grahami,* Benth., et forte *V. hookeriana,* K. B. K."—*Planchon in Hb. Kew.*

3. **Viola flagelliformis,** Hemsley, Diag. Pl. Nov. pars alt. p. 20.

Caulescens hirsuta, pilis albidis patentibus, caulibus elongatis pedalibus vel ultra, foliis longe petiolatis orbiculari-cordatis remotiuscule crenulatis, stipulis oblique oblongis leviter ciliato-dentatis,

floribus flavis mediocribus longe pedunculatis, bracteis supra medium locatis, sepalis lineari-lanceolatis obtusiusculis glabris vel glabrescentibus basi brevissime productis, petalis lateralibus et superioribus conformibus obovatis, inferiore late obcordato brevissime calcarato, antherarum appendicibus brunneis ovato-ellipticis, ovario glabro, stylo clavato glabro basi vix curvato.

Herba caulescens, hirsuta pilis albidis patentibus. *Caules* graciles, usque pedales. *Folia* longe petiolata, orbiculari-cordata, 9 lin. ad 2 poll. diametro, remotiuscule crenulata; petiolis inferiorum 4–5-pollicaribus, sursum gradatim brevioribus; stipulis oblique oblongis, circiter 4 lin. longis, margine leviter ciliato-dentatis. *Flores* flavi, mediocres, longe pedunculati, pedunculis foliis subæquilongis, bracteis parvis linearibus supra medium locatis; sepala basi brevissime producta, lineari-lanceolata, circiter 3 lin. longa, obtusiuscula, glabra vel glabriuscula; petala circiter 6 lin. longa, lateralia et superiora conformia obovata, apice rotundata, inferius late obcordatum, sinu brevi rotundato, basi cuneatum, brevissime calcaratum; antherarum appendices brunneæ, ovato-ellipticæ; ovarium glabrum, stylo clavato glabro basi vix curvato. *Semina* matura non visa.

Mexico (*Palmer*, 1033). Hb. Kew.

4. **Viola grahami,** Benth. Pl. Hartw. p. 35.

North and South Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 33), Sierra Madre (*Seemann*), in pine-woods near Morelia (*Hartweg*), Santa Fé (*Bourgeau*, 287), Mexico, without localities (*Bates*, *Coulter*). Hb. Kew.

5. **Viola hookeriana,** H. B. K. Nov. Gen. et Sp. v. p. 369, t. 492. fig. 2.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 34); South Mexico, subalpine region near Real del Monte (*Humboldt*), Mineral del Monte (*Ehrenberg*), Chiapas, &c. (*Ghiesbreght*). Hb. Kew.

The same species probably occurs in Ecuador. See observation under *V. ciliata*.

6. **Viola humilis,** H. B. K. Nov. Gen. et Sp. v. p. 369, t. 492. fig. 1.

South Mexico, in subalpine localities, Real del Monte, 8550 feet (*Humboldt & Bonpland*), Misteca Alta, 7000 feet (*Galeotti*, 4498). Hb. Kew.

7. **Viola latistipula,** Hemsley, Diag. Pl. Nov. pars alt. p. 21.

Caulescens, caule brevi gracili, foliis petiolatis reniformibus cordatisve hispidulo-pilosis crenatis, stipulis amplis oblongo-ellipticis ciliatis, floribus albis (?) parvis, sepalis inæqualibus lanceolato-oblongis obtusis albo marginatis, petalis oblongo-obovatis lateralibus angustioribus oblique semitortis, calcari brevissimo, stylo basi curvato clavato, stigmate leviter hirsuto.

Herba perennis, caulescens, caule gracili, debili, in spec. nostris 1–2-pollicari. *Folia* petiolata, plus minusve hispidulo-pilosa et ciliata, cordata vel reniformia, vix 6 lin. diametro, crenata, petiolo 4–6 lin. longo; stipulæ oblongo-ellipticæ, circiter 3 lin. longæ, ciliatæ. *Pedunculi* uniflori, bibracteati, foliis duplo longiores, bracteis integris. *Flores* albi, minimi, 3–4 lin. longi; sepala glabra, inæqualia, lanceolato-oblonga, obtusa, basi brevissime producta, rotundata, albo marginata; petala oblongo-obovata, rotundata, lateralia angustiora et oblique semitorta, calcari brevissimo rotundato; stamina sessilia, antherarum appendicibus parvis, cucullatis; ovarium glabrum, stylo clavato basi curvato, stigmate leviter hirsuto.

South Mexico, Zimapan (*Coulter*, 736). Hb. Kew.

The specimens of this species are evidently from weakly plants; therefore the dimensions may be expected to exceed considerably those here given.

8. **Viola nannei,** Polakowsky, in Linnæa, xli. p. 547.

COSTA RICA, Carpintera, in wet meadows (*Polakowsky*).

9. **Viola pteropoda,** Hemsley, Diag. Pl. Nov. pars alt. p. 20.

Rhizoma elongatum crassiusculum, foliis densissime confertis longe petiolatis ovato-ellipticis vel basi leviter cordatis remotiuscule calloso-serratis brevissime puberulis, petiolo alato, stipulis scariosis ferrugineis elongatis angustissimis utrinque remote filiformi-lobatis vel laceratis, floribus magnitudine eorum *V. odoratæ,* sepalis fere æqualibus lanceolato-oblongis obtusis, petalis oblongo-obovatis integris, calcari brevissimo rotundato, ovario glabro, stigmate late complicato glabro.

Herba perennis, rhizomate elongato, crassiusculo. *Folia* densissime conferta, petiolata, ovato-elliptica vel cordato-elliptica, remotiuscule calloso-serrata, utrinque brevissime puberula et (præcipue subtus) minute ferrugineo picta, lamina sesqui- usque bipollicari, petiolo alato, 2–3-pollicari; stipulæ ferrugineæ, scariosæ, fere pollicares, angustissime et remote laceratæ vel fimbriatæ. *Pedunculi* graciles, uniflori, foliis breviores, bibracteati bracteis supra medium insertis scariosis angustissimis, 4–6 lin. longis, basi tantum longiuscule fimbriatis. *Flores* (albi?) magnitudine illorum *V. odoratæ*; sepala glabra vel glabrescentia, lanceolato-oblonga, obtusa, basi breviter producta, rotundata; petala oblongo-obovata, rotundata, integra, calcari brevissimo rotundato; stamina subsessilia, antherarum appendicibus oblongo-rotundatis; stylus rectus, stamina excedens, stigmate lato complicato glabro.

NORTH MEXICO, Sierra Madre (*Seemann*, 2144). Hb. Kew.

10. **Viola pubescens,** Ait. Hort. Kew. ed. 1, iii. p. 290.

CANADA and SASKATCHEWAN to NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 36). Hb. Kew.

11. **Viola reticulata,** Schl. in Linnæa, xii. p. 201.

SOUTH MEXICO, Mineral del Monte (*Ehrenberg*).

12. **Viola scandens,** H. B. K. Nov. Gen. et Sp. v. p. 371, t. 493.

Viola dichotoma, Moç. et Sessé, DC. Prodr. i. p. 297; Calques des Dess. Fl. Mex. 33.

SOUTH MEXICO, humid places in St. Bartolo, Chiapas (*Linden*, 1083), without habitats (*Jurgensen*, 557, 907, *Sallé*). Hb. Kew.

This has also a wide range in SOUTH AMERICA, to BRAZIL and PERU.

13. **Viola striata,** Ait. Hort. Kew. ed. 1, vol. iii. p. 291.

SOUTH MEXICO, on the way up the Volcan de Orizaba (*Schiede & Deppe*).

14. **Viola umbraticola,** H. B. K. Nov. Gen. et Sp. v. p. 370.

SOUTH MEXICO, near Real del Monte, 8550 feet (*Humboldt & Bonpland*).

15. **Viola,** sp.

SOUTH MEXICO, Zimapan (*Coulter*, 736). Hb. Kew.

16. **Viola,** sp. (aff. *V. ciliatæ*).

GUATEMALA (*O. Salvin*). Hb. Kew.

17. **Viola,** sp.

GUATEMALA, damp places summit of Volcan de Agua (*Salvin & Godman*). Hb. Kew.

This is named *V. magellanica*, Forst. ?, but seems to be distinct from the Patagonian plant.

4. IONIDIUM.

Ionidium, Vent. Hort. Malm. t. 27; Benth. et Hook. Gen. Plant. i. p. 117.

Herbs, under-shrubs, or rarely erect shrubs. About forty species, two or three of them in Tropical Africa and Asia, seven in Australia, and all the rest American, chiefly in the tropics.

1. **Ionidium botterii,** Turcz. in Bull. Soc. Nat. Mosc. 1863, i. p. 556.

SOUTH MEXICO, Orizaba (*Botteri*).

2. **Ionidium? calceolarium,** Moç. et Sessé, DC. Prodr. i. p. 311; Calques des Dess. Fl. Mex. 35.

MEXICO (*Moçino & Sessé*).

3. **Ionidium elatum,** Turcz. in Bull. Soc. Nat. Mosc. 1863, i. p. 556.

SOUTH MEXICO (*Ghiesbreght*).

4. **Ionidium gracile,** Moç. et Sessé, in DC. Prodr. i. p. 309; Calques des Dess. Fl. Mex. 36.

MEXICO (*Moçino & Sessé*).

5. **Ionidium lasiocarpum,** Presl, Reliq. Hænk. ii. p. 96.

SOUTH MEXICO, on the western side (*Hænke*).

6. **Ionidium lineare,** Torr. in Gray, Gen. Ill. i. p. 189, t. 82.

TEXAS, NEW MEXICO, and—NORTH MEXICO, Sonora and Chihuahua (*Torrey*).

7. **Ionidium longifolium,** Moç. et Sessé, in DC. Prodr. i. p. 311; Calques des Dess. Fl. Mex. 34.

MEXICO (*Moçino and Sessé*).

8. **Ionidium lobelioides,** Schl. in Linnæa, xii. p. 203.

SOUTH MEXICO, near Oaxaca (*Mühlenpfordt*).

9. **Ionidium occultum,** Polakowsky, in Linnæa, xli. p. 548.

COSTA RICA, concealed among bushes in the primeval forests of Carpintera (*Polakowsky*).

10. **Ionidium polygalæfolium,** Vent. Malm. p. 27, t. 27; H. B. K. Nov. Gen. et Sp. v. p. 376, t. 496. fig. 1.

ARKANSAS, TEXAS, &c. to—SOUTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 32), San Angel, valley of Mexico (*Bourgeau*, 294), near Tacubaya (*Schaffner*). Hb. Kew.

11. **Ionidium riparium,** H. B. K. Nov. Gen. et Sp. v. p. 378.

Ionidium parietariæfolium, DC.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 36½), ? Sonora (*Wright*, 859); South Mexico, Vera Cruz (*Linden*, 211, *Galeotti*, 4501), Orizaba (*Botteri*), Hacienda de la Laguna (*Schiede*); Guatemala, Chojoja, near Mazatenango (*Bernoulli*, 68), Volcan de Fuego (*Salvin*); Costa Rica, in damp meadows near San José (*Polakowsky*); Panama (*Duchassaing*). Hb. Kew.

A common plant in Tropical and Subtropical South America.

12. **Ionidium strictum,** Vent. Malm. No. 27, in adnot.

Ionidium linarifolium, Vent.

Antigua, Cuba, Guadalupe, and—Mexico (*Grisebach*).

13. **Ionidium verbenaceum,** H. B. K. Nov. Gen. et Sp. v. p. 379, t. 497.

Mexico, cultivated in gardens (*Humboldt & Bonpland*).

14. **Ionidium,** sp. (aff. *I. anomalo*, H. B. K.).

Panama, Bujio railway-station (*S. Hayes*). Hb. Kew.

15. **Ionidium,** sp.

South Mexico, Orizaba (*Bilimek*, 35), Chiapas (*Ghiesbreght*, 660). Hb. Kew.

16. **Ionidium,** sp.

South Mexico, Zimapan (*Coulter*, 738). Hb. Kew.

17. **Ionidium,** sp.

South Mexico, Antigua, Vera Cruz (*Linden*, 41), Jalapa, 3000 feet (*Galeotti*, 7085). Hb. Kew.

5. HYBANTHUS.

Hybanthus, Jacq. ex H. B. K. Nov. Gen. et Sp. v. p. 385, t. 494; Benth. et Hook. Gen. Plant. i. p. 118, sub *Ionidio*.

1. **Hybanthus? mexicanus,** Ging. in DC. Prodr. i. p. 312; Calques des Dess. Fl. Mex. 37.

Mexico (*Moçino & Sessé*).

This does not appear to differ from *H. havanensis*, H. B. K., a native of Cuba.

Tribe ALSODEIEÆ.

6. ALSODEIA.

Alsodeia, Thouars, Hist. Vég. Afr. p. 55, t. 17 et 18; Benth. et Hook. Gen. Plant. i. p. 118.

Shrubs or trees, about forty species—twenty in the tropics of the Old World, and twenty in Tropical and Subtropical America.

1. **Alsodeia sylvatica,** Seem. Bot. Voy. 'Herald,' p. 75, t. 40.

Panama, near Cruces (*Seemann*, 548), Empire railway-station (*S. Hayes*). Hb. Kew.

2. **Alsodeia,** sp. (aff. *A. flavescenti*, Aubl.).
NICARAGUA, Chontales (*Seemann*, 6, *Tate*, 143). Hb. Kew.

3. **Alsodeia,** sp. (? *A. deflexa*, Benth.).
PANAMA. A shrub growing on the banks of the Rio Grande (*S. Hayes*). Hb. Kew.

4. **Alsodeia,** sp.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 2114, *Sallé*, 1). Hb. Kew.

5. **Alsodeia,** sp.
SOUTH MEXICO, Oaxaca (*Ghiesbreght*). Hb. Kew.

Tribe SAUVAGESIEÆ.

There are only four genera and about twenty-one species of this tribe—two of the former and sixteen of the latter being American, and the others natives of the Indian Archipelago.

7. SAUVAGESIA.

Sauvagesia, Linn. Gen. Plant. n. 286; Benth. et Hook. Gen. Plant. i. p. 120.

Herbs or under-shrubs, about ten species, all indigenous in Tropical or Subtropical America, and one of them also in West Tropical Africa.

1. **Sauvagesia erecta,** Linn. Sp. Pl. ed. 2, p. 294, not of Spreng., Aubl. Guian. t. 100; Jacq. Stirp. Am. t. 77.
Sauvagesia geminiflora, DC. Prodr. i. p. 315; Calques des Dess. Fl. Mex. 38*.
SOUTH MEXICO, between Misantla and Colipa (*Schiede*); GUATEMALA, between Gualan and Roblar Grande (*Bernoulli*, 796); NICARAGUA (*Tate*); PANAMA, Chagres (*Fendler*), in meadows near the town of Panama (*Seemann*). Hb. Kew.
Common throughout Tropical and Subtropical AMERICA; also common in West Tropical AFRICA, MADAGASCAR, JAVA, &c.

2. **Sauvagesia pulchella,** Planch. in Seem. Bot. Voy. 'Herald,' p. 80; Ann. Sc. Nat. 1862, p. 278.
PANAMA, in meadows near the city of Panama (*Seemann*), on grassy plains, Panama railway-station (*S. Hayes*, 405).—WEST INDIES and COLOMBIA. Hb. Kew.

3. **Sauvagesia tenella,** Lam. Ill. ii. No. 2769; St.-Hil. Pl. Rar. t. 3. fig. B.
GUATEMALA, Barbasco (*Bernoulli*, 947); PANAMA, in meadows near the city of Panama (*Seemann*, 359).—Southward to BRAZIL. Hb. Kew.

Order XIV. BIXINEÆ.

Bixineæ, Benth. et Hook. Gen. Plant. i. p. 122.

Shrubs or trees, dispersed over the warmer regions of the globe. There are about 170 species, belonging to thirty-one genera.

Tribe BIXEÆ.

1. COCHLOSPERMUM.

Cochlospermum, Kunth, Malv. p. 6; Benth. et Hook. Gen. Plant. i. p. 124 (*Maximiliana,* Mart., et *Wittelsbachia,* Mart.).

Trees, shrubs, or rhizomatous herbs, about twelve species, growing in tropical regions—one Asiatic, three Australian, two African, and the rest American.

1. **Cochlospermum hibiscoides,** Humb. et. Bonpl. Synops. Pl. Æquin. iii. p. 24. (Tab. II.)

Cochlospermum serratifolium, DC. Prodr. i. p. 527; Calques des Dess. Fl. Mex. 95.

South Mexico, Zacuapan, Vera Cruz (*Linden,* 864), ravines near Vera Cruz, very rare (*Galeotti,* 4196), Mirador, at 3000 feet (*Heller*), valley of Cordova (*Bourgeau,* 2256); Nicaragua (*Tate*); Panama, without special localities (*Seemann, Fendler, and Halsted*), Isle of Taboga (*Sinclair*).—West Indies and Colombia. Hb. Kew.

Kunth (H. B. K. Nov. Gen. et Sp. vii. p. 223) describes the specimens he had from Campeche as having a glabrous, and the others as having a tomentose ovary. None of the specimens we have seen has a glabrous ovary.

EXPLANATION OF TAB. II.

A leaf and flowers, natural size.

2. AMOREUXIA.

Amoreuxia, Moç. et Sessé, in DC. Prodr. ii. p. 639; Benth. et Hook. Gen. Plant. i. p. 124.

Three or four shrubby species, restricted to Tropical and Subtropical America.

1. **Amoreuxia malvæfolia,** A. Gray, Pl. Wright, i. p. 29, adnot.

North Mexico, Chihuahua? (*Potts*). Hb. Kew.

2. **Amoreuxia palmatifida,** Moç. et Sessé, in DC. Prodr. ii. p. 638; Calques des Dess. Fl. Mex. 1171.

Amoreuxia schiedeana, Planch. in Hook. Lond. Journ. Bot. vi. p. 139, t. 1.

Euryanthe schiedeana, Ch. et Schl.

New Mexico and Texas.—North Mexico, Monterey, Nuevo Leon (*Eaton & Edwards,* 76), Sonora Alta (*Coulter,* 789), Santa-Cruz valley, Sonora (*Thurber*), hills

along mountain-streams, Rancho Desierto (*Wright*), San Luis Potosi to San Antonio (*Parry*, 37).—COLOMBIA. Hb. Kew.

A. schiedeana, Planch., is certainly the same as the original *A. palmatifida*.

3. **Amoreuxia wrightii**, A. Gray, Pl. Wright. ii. p. 26.

SOUTH MEXICO, near Tantoyuca (*Ervendberg*, 124).

3. BIXA.

Bixa, Linn. Gen. Plant. n. 654; Benth. et Hook. Gen. Plant. i. p. 125.

One (or two?) species, a small tree, native of the warmer parts of America.

1. **Bixa orellana**, Linn. Sp. Pl. p. 730; Sloane, Hist. Jamaica, ii. p. 52, t. 181. fig. 1.

Widely dispersed in Tropical and Subtropical AMERICA, and cultivated and naturalized in the tropics of the Old World. Common on the coast-region from MAZATLAN to PANAMA (*Seemann*), Chagres (*Fendler*); NICARAGUA (*Lévy*), cultivated; COSTA RICA, Angostura, both wild and cultivated (*Polakowsky*). Hb. Kew.

4. AZARA.

Azara, Ruiz et Pav. Prodr. p. 79, t. 36; Benth. et Hook. Gen. Plant. i. p. 127.

Shrubs or trees, natives of Chili; *A. umbellata* probably belongs to some other genus. About a dozen species are known.

1. **Azara umbellata**, Presl, Reliq. Hænk. ii. p. 92.

SOUTH MEXICO, on the west coast (*Hænke*).

Tribe ONCOBEÆ.

5. MAYNA.

Mayna, Aubl. Pl. Guian. p. 921, t. 352; Benth. et Hook. Gen. Plant. i. p. 125.

Trees or shrubs, natives of the warmer parts of America. There are about seven species.

1. **Mayna laurina**, Benth. in Journ. Linn. Soc. v. Suppl. ii. p. 80.

Lindackeria laurina, Presl, Reliq. Hænk. t. 65.

SOUTH MEXICO, western coast (*Hænke*); PANAMA, Carbonera (*Seemann*, 561), railway route (*S. Hayes*, 408).—COLOMBIA. Hb. Kew.

Tribe FLACOURTIEÆ.

6. LÆTIA.

Lætia, Linn. Gen. Plant. n. 661; Benth. et Hook. Gen. Plant. i. p. 126.

About ten shrubby species, natives of Tropical America.

1. **Lætia thamnia,** Sw. Fl. Ind. Occ. ii. p. 950; Browne, Hist. Jamaica, t. 25. fig. 2.
PANAMA, Chagres (*Fendler*, 106).—WEST INDIES. Hb. Kew.

7. XYLOSMA.

Xylosma, Forst. Prodr. p. 72; Benth. et Hook. Gen. Plant. i. p. 128.

Trees, often spiny; about twenty-five species, dispersed chiefly in tropical and sub-tropical regions of both hemispheres, but most abundant in America.

1. **Xylosma (Hisingera) cinerea,** Clos in Ann. Sc. Nat. série 4, viii. p. 223.
Flacourtia cinerea, H. B. K.

SOUTH MEXICO, Oaxaca, rocks at 5500 feet (*Galeotti*, 4519). Hb. Kew.

2. **Xylosma (Hisingera) elliptica,** Clos in Ann. Sc. Nat. série 4, viii. p. 226.
Hisingera mexicana, Pl.

SOUTH MEXICO, near Jalapa, 3000 feet (*Galeotti*, 4517), Orizaba (*Botteri*, 890); PANAMA, Aspinwall (*S. Hayes*, 158), Chagres (*Fendler*, 329). Hb. Kew.

3. **Xylosma (Hisingera) flexuosa,** Clos in Ann. Sc. Nat. série 4, viii. p. 225.
Flacourtia flexuosa, H. B. K.

SOUTH MEXICO, near Jalapa (*Humboldt & Bonpland*, *Linden*, 952), Orizaba (*Botteri*, 1069 and 1070, *Bourgeau*, 2628). Hb. Kew.

4. **Xylosma intermedia,** Pl. et Tr. Prodr. Fl. N. Gran. i. p. 100.
Hisingera intermedia, Seem.

PANAMA, San Lorenzo, Veraguas (*Seemann*, 1623). Hb. Kew.

5. **Xylosma (Hisingera) lanceolata,** Turcz. in Bull. Soc. Nat. Mosc. 1863, i. p. 557.3

SOUTH MEXICO (*Botteri*).

6. **Xylosma nitida,** A. Gray in Griseb. Fl. Brit. West. Ind. p. 21.
Hisingera nitida et *puberula,* Schl.
Hisingera celastrinea, Clos.
Flacourtia celastrinea, H. B. K.

SOUTH MEXICO, Talisco (*Beechey*), Yucatan and Tabasco (*E. P. Johnson*, 65 and 66), Orizaba (*Botteri*, 975, 1057, and 1058), Vera Cruz to Orizaba (*F. Müller*, 828), Jalapa (*Galeotti*, 4518), Vera Cruz (*Linden*, 951); GUATEMALA (*Friedrichsthal*).—TRINIDAD, JAMAICA, VENEZUELA. Hb. Kew.

7. **Xylosma (Hisingera) panamensis,** Turcz. in Bull. Soc. Nat. Mosc. 1863, i. p. 553.

PANAMA, Chagres (*Fendler*, 194).

8. **Xylosma (Hisingera) seemanni,** Tr. et Pl. in Ann. Sc. Nat. série 4, vol. xvii. p. 99.
Hisingera nitida, Seem., not of Schl.

PANAMA, Boquete, Veraguas (*Seemann*, 1646). Hb. Kew.

9. **Xylosma (Hisingera)**, var. **præcedentis ?**
PANAMA, Taboga, 650, and on the hills about Loxeria, 674 (*S. Hayes*). Hb. Kew.

Order XV. POLYGALEÆ.

Polygaleæ, Benth. et Hook. Gen. Plant. i. p. 134.

Herbs, undershrubs, or erect or climbing shrubs, rarely trees, natives of temperate and tropical countries, and generally dispersed. There are about 400 species, belonging to sixteen genera.

1. POLYGALA.

Polygala, Linn. Gen. Plant. n. 851 ; Benth. et Hook. Gen. Plant. i. p. 136.

Herbs, undershrubs, or shrubs, spread over nearly all temperate and tropical countries, but rare in Australia. About 200 species.

1. **Polygala alba,** Nutt. Gen. ii. p. 87.
LOUISIANA, TEXAS, &c. to—MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 39), valley of the Santa Cruz, Sonora (*Smith*), San Antonio de las Alanzales (*Gregg*), Zacatecas (*Coulter*, 725), Aguas Calientes (*Hartweg*, 30). Hb. Kew.

2. **Polygala americana,** Mill. Dict. ed. 8, no. 7 ; DC. Prod. i. p. 330.
Polygala caracasana, H. B. K., et *P. rivinæfolia*, H. B. K.
SOUTH MEXICO, Oaxaca (*Ghiesbreght*), Zimapan (*Coulter*, 732), Vera Cruz (*Galeotti*, 879, *Linden*, 174), without localities (*Bates*, *Harris*, *&c.*); GUATEMALA, Volcan de Fuego (*Salvin*, *Bernoulli*); PANAMA, Veraguas (*Seemann*, 1645).—And widely dispersed in SOUTH AMERICA, also reported from TRINIDAD. Hb. Kew.

3. **Polygala angustifolia,** H. B. K. Nov. Gen. et Sp. v. p. 405.
Polygala monticola, H. B. K.
MEXICO (*Grisebach*) ; GUATEMALA, Vera Paz (*Bernoulli*, 998).—Generally distributed in the WEST INDIES and Tropical SOUTH AMERICA. Hb. Kew.

4. **Polygala boykinii,** Nutt. in Journ. Acad. Philad. vii. p. 86.
Polygala bicolor, H. B. K. Nov. Gen. et Sp. v. p. 394, t. 507.
SOUTHERN STATES of NORTH AMERICA,—through MEXICO, Oaxaca (*Ghiesbreght*), Tacubaya (*Schaffner*), Vera Cruz (*Müller*), Cerro de Quinzeo, Michoacan, 8500 feet (*Galeotti*, 876), Orizaba (*Müller*, 999); GUATEMALA, Laguna de Ayarces (*Bernoulli*, 662). Hb. Kew.

5. **Polygala brizoides,** St.-Hil. Fl. Bras. mérid. ii. p. 44, t. 88.
Polygala camporum, Benth.
SOUTH MEXICO, Mirador, Vera Cruz (*Linden*, 175).—Widely dispersed in Tropical SOUTH AMERICA and the WEST INDIES; but we have seen no specimen from the country between Colombia and South Mexico. Hb. Kew.

6. **Polygala buxifolia,** H. B. K. Nov. Gen. et Sp. v. p. 407.

South Mexico, Tlalpuxahua (*Graham*), Santa Rosa, 7800 feet (*Humboldt & Bonpland*), no locality (*Coulter*, 732). Hb. Kew.

7. **Polygala calvipes,** Schl. in Linnæa, xiv. p. 150 (according to Walp. Rep. i. p. 238; but the reference is incorrect).

Mexico.

8. **Polygala conferta,** A. W. Bennett, in Hemsley, Diag. Pl. Nov. pars 1, p. 2.

Herba foliis verticillatis, racemo longe pedunculato conferto, floribus minutis, carina cristata, seminis caruncula appendiculata.

Caulis ascendens, 2–4, pollicaris, tenuis, simplex, striatus. *Folia* verticillata, ima obovata vel obcuneata, superiora linearia, marginibus incrassatis. *Racemi* terminales, $\frac{1}{4}$ poll. longi, longe pedunculati, confertissimi, cylindrici vel conici. *Flores* minuti, subsessiles, bracteis parvis deciduis; sepala exteriora subæqualia, ovata, alis sepala exteriora duplo superantibus, obovatis, corollam æquantibus; carina cristam sat magnam serratam præbens; petalorum lateralium pars libera parva, porrecta; ovarium ellipticum, glabrum, subglandulosum, alas maturas æquans, stylo brevi, stigmate bilobato cristato.—*Semina* nigra, elliptica, hirsuta; caruncula parva, appendice membranacea quam semen $\frac{1}{3}$ breviore.

South Mexico, Orizaba (*F. Mueller*, 302). Hb. Mart.

Near *P. adenophylla*.

9. **Polygala cruciata,** Linn. Am. ii. p. 138.

Massachusetts to Florida.

Forma **parva** (Bennett).

South Mexico, Orizaba (*Botteri*, 822, *Bourgeau*, 3249). Hb. Kew.

10. **Polygala floribunda,** Bth. Pl. Hartw. p. 58.

South Mexico (*Hartweg*, 447, *and Jurgensen*, 453), pine-forests of Puebla Nueva (*Linden*, 172); Guatemala (*Skinner*, *Salvin & Godman*). Hb. Kew.

11. **Polygala galioides,** Poir. Dict. v. p. 503.

Polygala asperuloides, H. B. K. Nov. Gen. et Sp. v. p. 403.

Polygala aparinoides, Hook. et Arn.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 39½); South Mexico, Talisco (*Beechey*); Guatemala, Chilasco (*Salvin & Godman*).—A common species in Tropical South America. Hb. Kew.

12. **Polygala glochidiata,** H. B. K. Nov. Gen. et Sp. v. p. 400.

North Mexico, Cerro de Pinal (*Seemann*, 1519); South Mexico, Orizaba (*Botteri*, 820); Guatemala (*Bernoulli*, 1102).—Northern part of South America, Brazil, and West Indies. Hb. Kew.

13. **Polygala glandulosa,** H. B. K. Nov. Gen. et Sp. v. p. 404, t. 510.

South Mexico, on the hills near the cave "Puente de la Madre de Dios," 5280 feet (*Humboldt & Bonpland*).

14. **Polygala gracilis,** H. B. K. Nov. Gen. et Sp. v. p. 402.
COSTA RICA (*Endres*, 177).—CUBA. Hb. Kew.

15. **Polygala hebantha,** Bth. Bot. Voy. Sulph. p. 67.
HONDURAS, Gulf of Fonseca (*Sinclair*), without habitat (*Friedrichsthal*). Hb. Kew.

16. **Polygala hemipterocarpa,** A. Gray, Pl. Wright. ii. p. 31.
TEXAS.—NORTH MEXICO, Sierra del Pajarito (*Schott*), stony hills of the Sonoita, near Rancho Desierto, on the borders of Sonora (*Wright*). Hb. Kew.

17. **Polygala hygrophila,** H. B. K. Nov. Gen. et Sp. v. 395, t. 508.
PANAMA, near the city (*Seemann*).—Northern part of SOUTH AMERICA.

18. **Polygala incarnata,** Linn. Sp. 986.
Polygala microptera (sphalmate *microphylla*), A. W. Bennett, in Hemsley, Diag. Pl. Nov. pars 1, p. 2.
South-eastern States of NORTH AMERICA to—SOUTH MEXICO, Savannas, Jalapa (*Galeotti*, 7096), Mirador (*Linden*, 74), Oaxaca (*Liebmann*, 16–18). Hb. Kew.

19. **Polygala leptocaulis,** Torr. and Gray, Fl. N. Amer. i. p. 130.
Polygala tenuis, Hook.
LOUISIANA, TEXAS,—MEXICO, Orizaba (*Bilimek*, 38).—VENEZUELA. Hb. Kew.

20. **Polygala lindheimeri,** A. Gray, Pl. Lindh. ii. p. 150.
TEXAS.—NORTH MEXICO, Sonora (*Torrey*), Monterey, Nuevo Leon (*Eaton & Edwards*). Hb. Kew.

21. **Polygala macradenia,** A. Gray, Pl. Wright. i. p. 39.
TEXAS.—NEW MEXICO; ? NORTH MEXICO, along the valley of the Rio Grande. Hb. Kew.

22. **Polygala minutiflora,** Presl, Reliq. Hænk. ii. p. 100.
SOUTH MEXICO, on the west side (*Hænke*).

23. **Polygala mexicana,** DC. Prodr. i. p. 333; Calques des Dess. Fl. Mex. 40.
SOUTH MEXICO (*Moçino & Sessé*).

24. **Polygala nemoralis,** Bennett in Trimen, Journ. Bot. 1879, p. 172.
SOUTH MEXICO, Chiapas (*Linden*, 173); GUATEMALA, Chilasco (*Salvin & Godman*). —BOLIVIA.

25. **Polygala obscura,** Benth. Pl. Hartw. p. 58.
NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 41 and 44), Chihuahua (*Potts*); SOUTH MEXICO, Zimapan (*Coulter*, 728 and 729), rocks of the Misteca Alta, Cordillera of Oaxaca (*Galeotti*, 883), Mount San Felipe (*Andrieux*, 525), Hacienda del Carmen (*Hartweg*, 446). Hb. Kew.

26. **Polygala ovalifolia,** DC. Prodr. i. p. 331.
Polygala ovatifolia, A. Gray.
NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*,

43), near Monterey (*Eaton* & *Edwards*); South Mexico, Tacubaya (*Schaffner*). Hb. Kew.

27. **Polygala paniculata,** Linn. Amœn. v. p. 402.

South Mexico, Yucatan and Tabasco (*Johnson*), without special localities (*Coulter*, 724, *and Graham*, 132); Guatemala (*Bernoulli*); Costa Rica, San José and Cartago (*Polakowsky*); Panama, Chagres (*Fendler*, 55), in shady places near the city (*Seemann*, 575).—A very common plant throughout the West Indies and tropical South America.

28. **Polygala parryi,** A. W. Bennett in Hemsley, Diag. Pl. Nov. pars altera, p. 21.

Fruticosa nana, foliis parvis breviter petiolatis lanceolatis usque orbicularibus integerrimis puberulis, racemis paucifloris, floribus albis, bracteis persistentibus, sepalo postico tantum viridi et persistente, sepalis 2 anterioribus discretis albis et alas fere æquantibus, alis obovatis, carina ecristata, petalis lateralibus oblongis carinam excedentibus, capsula orbiculari.

Frutex nanus (exemplaria nostra misera semiusta), ramis brevibus teretibus puberulis. *Folia* petiolata, lanceolata, oblonga, elliptica vel fere orbicularia, 3–6 lin. longa, integerrima mucronata utrinque puberula, petiolo ½–1 lin. longo. *Racemi* pauciflori, bracteis persistentibus. *Flores* albi, vix 2 lin. longi; sepalum posticum tantum viride et persistens, ovato-lanceolatum, acutum, ceteris brevior; sepala 2 anteriora discreta, alba, oblonga, subacuta, minute ciliata, alas fere æquantia, cito decidua; alæ minute ciliatæ, obovatæ; carina galeata, ecristata; petala lateralia erecta, oblonga, carina paulo longiora; ovarium puberulum, stylo curvato. *Capsula* orbicularis; semina oblonga, albo-villosa, carunculata, caruncula bialata.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 40). Hb. Kew.

This is a very distinct species, remarkable in having petaloid deciduous anterior sepals, &c.; but the specimens are from stunted plants which had been burnt to the ground.

29. **Polygala platycarpa,** Benth. Pl. Hartw. p. 113.

Guatemala (*Hartweg*).—Peru. Hb. Kew.

Planchon and Triana (Prodr. Fl. N. Gran. vol. i.) refer this to *P. americana*.

30. **Polygala puberula,** A. Gray, Pl. Wright. i. p. 40.

Texas, New Mexico,—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry and Palmer*, 421 and 422); South Mexico, valley of Mexico (*Schaffner*, 34), Misteca Alta, Cordillera of Oaxaca (*Galeotti*, 883), Monte Zocoalco, near Guadalupe, Prov. of Mexico (*Bourgeau*, 477). Hb. Kew.

31. **Polygala pubescens,** Mühlenb., Spreng. Syst. iii. p. 169.

South Mexico, in grassy places near Laguna (*Schiede & Deppe*).

32. **Polygala pulchella,** Ch. et Schl. in Linnæa, v. p. 230.

South Mexico, between Marantial and Paso de Ovejas (*Schiede & Deppe*).

33. **Polygala quadrangula,** Presl, Reliq. Hænk. ii. p. 100.

South Mexico, west side (*Hænke*).

34. **Polygala salviniana,** Bennett in Trimen, Journ. Bot. 1879, p. 203.
GUATEMALA, ridge above Calderas (*Salvin*). Hb. Kew.

35. **Polygala scoparia,** H. B. K. Nov. Gen. et Sp. v. p. 399.
Polygala wrightii, A. Gray.
?*Polygala mexicana,* DC.
MISSOURI, OREGON, CALIFORNIA, TEXAS,—NORTH MEXICO, Guadelupe Pass, Sonora (*Wright*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 45); SOUTH MEXICO, Tacubaya (*Schaffner*, 32, 37), Real del Monte (*Coulter*), Orizaba (*Botteri*, 823); GUATEMALA, Llano de la Laguna de Ayarces (*Bernoulli*). Hb. Kew.

36. **Polygala strigulosa,** Schl. in Linnæa, xiv. p. 160.
SOUTH MEXICO, near Oaxaca (*Mühlenpfordt*).

37. **Polygala trichosperma,** Linn. Mant. p. 257; Jacq. Obs. iii. p. 16, t. 67.
Polygala longicaulis, H. B. K.
Polygala stellera, DC.
SOUTH MEXICO, Mirador, Vera Cruz (*Linden*, 176, *Galeotti*, 7036); GUATEMALA, valley of the Montagna (*Salvin & Godman*); PANAMA, Savannas, Saseria (*S. Hayes*, 721). —Widely dispersed in Tropical SOUTH AMERICA. Hb. Kew.

38. **Polygala velutina,** Presl, Reliq. Hænk. ii. p. 100.
SOUTH MEXICO, west coast (*Hænke*).

39. **Polygala verticillata,** Linn. Amœn. ii. p. 159.
UTAH and NEW JERSEY, CAROLINA and MISSOURI,—NORTH MEXICO, Sierra Madre (*Seemann*, 2153); SOUTH MEXICO, Orizaba (*Botteri*, 820); GUATEMALA, Vera Paz, between Santa Rosa and El Patal (*Bernoulli*). Hb. Kew.

40. **Polygala,** sp.
GUATEMALA, Vera Paz (*Bernoulli*), San Gerónimo (*Salvin & Godman*). Hb. Kew.

2. SECURIDACA.

Securidaca, Linn. Gen. Plant. n. 852; Benth. et Hook. Gen. Plant. i. p. 138.

Shrubs, many of them climbing. There are twenty-five species, four or five of which grow in Tropical Africa and Asia; the remainder are American.

1. **Securidaca mollis,** H. B. K. Nov. Gen. et Sp. v. p. 421.
GUATEMALA, without locality (*Friedrichsthal*),—and the AMAZON REGION. Hb. Kew.

2. **Securidaca sylvestris,** Schl. in Linnæa, xiv. p. 381.
SOUTH MEXICO, Acapulco (*Beechey*), Vera Cruz (*Galeotti*, 3254, *Schiede*). Hb. Kew.

3. **Securidaca schlechtendaliana,** Walp. Rep. i. p. 246.
Securidaca? acuminata, Schl. in Linnæa, xiv. p. 382, not of St.-Hil.
MEXICO.

4. **Securidaca tomentosa,** St.-Hil. Fl. Bras. merid. ii. p. 68, t. 96.

Panama, open places near the city (*Seemann, S. Hayes*, 722).—Brazil, Guiana, Venezuela. Hb. Kew.

5. **Securidaca volubilis,** Linn. Sp. Pl. p. 992; Jacq. Am. t. 183.

S. pubescens, Seem. nec DC.

Nicaragua, Chontales (*Tate*, 467); Panama, shady woods, Lion-Hill railway-station (*S. Hayes*, 647), Isle of Taboga (*Hinds*), on the outskirts of woods (*Seemann*, 454).—Widely dispersed in Tropical South America, and in Trinidad and St. Thomas. Hb. Kew.

3. MONNINA.

Monnina, Ruiz et Pav. Fl. Peruv. Syst. i. p. 169; Benth. et Hook. Gen. Plant. i. p. 139.

Herbs, shrubs, or small trees, comprising about fifty species, all natives of South and Central America.

1. **Monnina angustifolia,** Schl. in Linnæa, xiv. p. 380, not of DC. Prodr. i. p. 340.

South Mexico, near the city of Mexico (*Hegewisch, Mühlenpfordt*), mountains of Oaxaca (*Aschenborn*, 427).

2. **Monnina bifurcata,** DC. Prodr. i. p. 339; Calques des Dess. Fl. Mex. 41.

Mexico (*Moçino & Sessé*).

3. **Monnina ciliolata,** DC. Prodr. i. p. 340; Calques des Dess. Fl. Mex. 42 (?=*M. xalapensis*).

Mexico (*Moçino & Sessé*).

4. **Monnina evonymoides,** Schl. in Linnæa, xiv. p. 380.

South Mexico, Orizaba (*Bourgeau*, 2831), valley of Cordova (*Bourgeau*, 1876), Vera Cruz (*Linden*, 177), Cordillera of Oaxaca, 4000 to 6000 feet (*Galeotti*, 885), near Chiconquiaco (*Schiede*), Vera Cruz to Orizaba (*Müller*, 1116). Hb. Kew.

5. **Monnina pterocarpa,** Ruiz et Pav. Fl. Peruv. i. p. 174.

Panama (*Cuming*, 1176). Hb. Kew.

Southward on the western side to Chili.

6. **Monnina sylvatica,** Schl. et Ch. in Linnæa, v. p. 231.

South Mexico, in woods, Jalapa (*Schiede*).

7. **Monnina xalapensis,** H. B. K. Nov. Gen. et Sp. v. p. 414.

North Mexico, Sierra Madre (*Seemann*, 2154), Zacatecas (*Hartweg*); South Mexico, Vera Cruz (*Linden*, 173), Chiapas (*Ghiesbreght*, 619), Mexico (*Graham*), Jalapa (*Galeotti*), Cañada (*Bilimek*, 337), Orizaba (*Botteri*, 968), Chalco (*Bourgeau*, 350),

Ario, 4000 feet (*Galeotti*, 896), Jalapa (*Linden*, 173), Toluca (*Andrieux*, 526); GUATEMALA, Volcan de Fuego, 8300 feet (*Salvin*); PANAMA, Volcan de Chiriqui, Veraguas (*Seemann*, 2154). Hb. Kew.

4. KRAMERIA.

Krameria, Linn. Gen. Plant. n. 161; Benth. et Hook. Gen. Plant. i. p. 140.

Undershrubs or rigid herbs; about twelve species, all natives of the warmer parts of America.

1. **Krameria cinerea,** Schauer in Linnæa, xx. p. 725.
SOUTH MEXICO, Zimapan (*Coulter*, 735, *Aschenborn*, 355).

2. **Krameria cuspidata,** Presl, Reliq. Hænk. ii. p. 103.
MEXICO (*Hænke*).

3. **Krameria cytisoides,** Cav. Ic iv. p. 60, t. 390.
SOUTH MEXICO, Zimapan (*Coulter*, 735), without locality (*Palmer*, 1043). Hb. Kew.

4. **Krameria lanceolata,** Torr. in Ann. Lyc. N. York, ii. p. 168; Gray, Gen. Ill. ii. t. 185.
Krameria beyrichii, Sporleder.
FLORIDA and TEXAS to—NORTH MEXICO, Cañon of Guadalupe, Sonora (*Capt. E. K. Smith*). Hb. Kew.
A. W. Bennett regards this as the same as *K. secundiflora*, DC.

5. **Krameria pauciflora,** DC. Prodr. i. p. 341; Calques des Dess. Fl. Mex. 44.
Krameria ixina, Benth., non Linn.
NORTH MEXICO, Zacatecas (*Hartweg*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 38); SOUTH MEXICO, Sierra de San Pedro Nolasco, &c. (*Jurgensen*, 709). Hb. Kew.

6. **Krameria parvifolia,** Benth. Bot. Voy. Sulph. p. 6, t. 2.
TEXAS, NEW MEXICO, CALIFORNIA to—NORTH MEXICO, San Pedro and Santa Cruz, Sonora (*Wright*), Guadalupe Cañon (*Smith*), Nuevo Leon (*Berlandier*). Hb. Kew.
Var. β, **ramosissima,** A. Gray, Pl. Wright. i. p. 102.
Devil's River, Leon Springs, and Presidio del Norte (*Wright*), Camargo (*Gregg*).

7. **Krameria revoluta,** Berg, in Bot. Zeitung, 1856, p. 751.
SOUTH MEXICO, between Tehuantepec and the Pacific Ocean (*Andrieux*, 527). Hb. K.

8. **Krameria secundiflora,** DC. Prodr. i. p. 341; Calques des Dess. Fl. Mex. 45.
MEXICO (*Moçino & Sessé*).

Order XVI. VOCHYSIACEÆ.

Vochysiaceæ, Benth. et Hook. Gen. Plant. i. p. 975.

Trees, often very large, rarely climbing shrubs, all natives of Tropical America, chiefly of the eastern side of South America. About 100 species, belonging to seven genera. Apparently not represented in any of the West-Indian islands.

1. VOCHYSIA.

Vochysia, Juss. Gen. Plant. p. 424; Benth. et Hook. Gen. Plant. i. p. 976.

Nearly forty species are known; they inhabit Brazil, Guiana, Eastern Peru, and Colombia.

1. **Vochysia ferruginea,** Mart. Nov. Gen. iii. p. 151, t. 92.

Vochysia tomentosa, DC.

Panama, Lion-Hill railway-station (*S. Hayes*), in woods near the towns of Cruces and Gorgona, and in the island of Coiba (*Seemann*).—Colombia to Brazil. Hb. Kew.

2. TRIGONIA.

Trigonia, Aubl. Pl. Guian. i. p. 390, t. 149, 150; Benth. et Hook. Gen. Plant. i. p. 977.

Climbing or twining shrubs. About twenty-five species.

1. **Trigonia floribunda,** Œrsted in Vidensk. Meddel. 1856, p. 38.

Nicaragua, in the neighbourhood of Granada (*Œrsted*).

2. **Trigonia lævis,** Aubl. Guian. i. p. 390, t. 150?

Nicaragua, without any special locality (*Tate*); Panama, in swampy places near the city (*S. Hayes*, 720).—Colombia to Guiana. Hb. Kew.

3. **Trigonia rigida,** Œrsted in Vidensk. Meddel. 1856, p. 38.

Nicaragua, in the vicinity of Granada (*Œrsted*).

4. **Trigonia rugosa,** Benth. Bot. Voy. Sulph. p. 74.

Central America (*Sinclair*, *Barclay*).—States of Colombia. Hb. Kew.

Order XVII. FRANKENIACEÆ.

Frankeniaceæ, Benth. et Hook. Gen. Plant. i. p. 140.

A small Order of perennial herbs and undershrubs, consisting of one genus and about twelve marked species, though more than thirty forms have been described. They inhabit the sea-shore and rocky places in both hemispheres.

1. FRANKENIA.

Frankenia, Linn. Gen. Plant. n. 445 ; Benth. et Hook. Gen. Plant. i. p. 141.

1. **Frankenia grandifolia,** Ch. et Schl. in Linnæa, i. p. 35 ; Torrey, Bot. Mex. Bound. Exped. p. 36, t. 5.

CALIFORNIA, ARIZONA, and southward into—NORTH MEXICO, Sonora (*Schott*).

Order XVIII. CARYOPHYLLEÆ.

Caryophylleæ, Benth. et Hook. Gen. Plant. i. p. 141.

Annual or perennial herbs, rarely shrubby. Upwards of 1200 species have been described ; but they should probably be reduced to about 800, belonging to forty genera. Most abundant in the extratropical parts of the northern hemisphere, extending into the Arctic regions ; rarer in the south, and almost confined to the mountains within the tropics.

Tribe SILENEÆ.

1. DIANTHUS.

Dianthus, Linn. Gen. Plant. n. 565 ; Benth. et Hook. Gen. Plant. i. p. 144.

A genus very numerous in species, abounding in the Mediterranean region, ten in South Africa, and three or four in North America.

1. **Dianthus ?,** sp. (floribus capitatis).

SOUTH MEXICO, without number or exact locality (*Bourgeau*). Hb. Paris.

2. SILENE.

Silene, Linn. Gen. Plant. n. 567 ; Benth. et Hook. Gen. Plant. i. p. 147.

Upwards of 200 well-marked species, finding their maximum concentration in the countries bordering the Mediterranean Sea. There are twelve in South Africa, and about twenty in North America.

1. **Silene antirrhina,** Linn. Sp. Pl. p. 600 ; Dill. Hort. Elth. p. 442, t. 313 ; Mart. Fl. Bras. xiv. pars ii. t. 66.

From the ROCKY MOUNTAINS and SOUTH-EASTERN STATES to—NORTH MEXICO, Sonora.—Also in SOUTH AMERICA, from the BOLIVIAN ANDES and SOUTH BRAZIL, to PATAGONIA. Hb. Kew.

2. **Silene laciniata,** Cav. Ic. vi. p. 44, t. 564 ; Bot. Reg. t. 1444.

Silene greggii, A. Gray ; *Silene allamani,* Otth. ; *Silene mexicana,* Otth. (Calques des Dess. Fl. Mex. 56) ; *Silene moçiniana,* Otth. (Calques des Dess. Fl. Mex. 57) ; *Lychnis pulchra,* Ch. et Schl.

TEXAS, CALIFORNIA,—NORTH MEXICO, Saltillo (*Gregg*), region of San Luis Potosi, 6000

to 8000 feet (*Parry & Palmer*, 46); South Mexico, without special habitats (*Hartweg*, *Sallé*, *Bourgeau*, *Tate*, &c.), Oaxaca (*Galeotti*), Tacubaya (*Bilimek*, 44), valley of Mexico (*Schaffner*, 54). Hb. Kew.

Tribe ALSINEÆ.

3. CERASTIUM.

Cerastium, Linn. Gen. Plant. n. 585; Benth. et Hook. Gen. Plant. i. p. 148.

Upwards of 100 species have been described; but there are probably less than half that number of distinct ones. They are dispersed nearly all over the world.

Bartling's species probably belong to *Arenaria* &c.

1. **Cerastium andinum,** Benth. Pl. Hartw. p. 162.

South Mexico, Toluca, 13,000 feet (*Heller*).—Andes of South America.

This is probably an incorrect determination for Mexico.

2. **Cerastium cuspidatum,** Hemsley, Diag. Pl. Nov. pars altera, p. 21.

Perenne ?, albido-pilosum, ramis adscendentibus gracilibus, foliis membranaceis pellucidis reticulato-venosis vena marginali vel leviter intramarginali ornatis cuspidatis, inferioribus obovatis ob-lanceolatisve, superioribus ovato-lanceolatis vel fere oblongis subamplexicaulibus, floribus mediocribus laxe cymosis, pedicellis gracillimis apice recurvis, sepalis lanceolatis obtusiusculis, petalis bifidis quam sepala paullo longioribus, stylis 5 petalis subæquilongis, capsula leviter curvata 10-dentata, seminibus compressis.

Herba perennis?, ramosa; ramis gracilibus adscendentibus infrapedalibus in specimine Schaffneriano, albido-pilosis, pilis deflectis. *Folia* pallida, membranacea, pellucida, reticulato-venosa, vena marginali vel leviter intramarginali ornata, cuspidata, 9–15 lin. longa, sparse albido-pilosa et ciliata, inferiora obovata vel oblanceolata, superiora ovato-lanceolata vel fere oblonga, sub-amplexicaulia. *Flores* albi, mediocres pentameri, laxe dichotome cymosi, pedunculis pedi-cellisque elongatis, gracillimis, pedicellis apice recurvis; sepala lanceolata vel lanceolato-oblonga, ad 2–2½ lin. longa, obtusiuscula, enervia; petala bifida, sepalis paullo longiora; stamina et styli graciles petalis subæquilongi. *Capsula* leviter curvata, ad 4 lin. longa, breviter 10-dentata, seminibus numerosis compressis.

South Mexico, valley of Mexico (*Schaffner*, 60). Hb. Kew.

3. **Cerastium fasciculatum,** Bartl. in Presl, Reliq. Hænk. ii. p. 16.

Mexico (*Hænke*).

4. **Cerastium molle,** Bartl. in Presl, Reliq. Hænk. ii. p. 17.

Mexico (*Hænke*).

5. **Cerastium nutans,** Raf. in Gray, Gen. Ill. ii. p. 40, t. 114.

C. apricum, var. *α. angustifolium*, et *β. brachycarpum*, Schl. in Linnæa, xii. p. 208.

Canada, southward to—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 47); South Mexico, Santa Fé (*Bourgeau*, 551), Peak of Orizaba (*Linden*, 933), Popocatepetl (*Galeotti*, 4220), Real del Monte (*Coulter*, 699), Cordillera of Oaxaca (*Galeotti*, 4410), near San Salvador (*Schiede*), Cerro Ventoso (*Ehrenberg*), Toluca (*Heller*). Hb. Kew.

6. **Cerastium orithales,** Schl. in Linnæa, xii. p. 209.

South Mexico, Peak of Orizaba (*Galeotti*, 4400), above the snow-line (*Schiede*), Orizaba, at an elevation of 12,000 feet (*Linden*, 932). Hb. Kew.

7. **Cerastium ramigerum,** Bartl. in Presl, Reliq. Hænk. ii. p. 16.

Mexico (*Hænke*).

8. **Cerastium triviale,** Link, Hort. Berol. i. p. 433.

Widely dispersed in the Old World; but most likely introduced into Mexico (*Jurgensen*, 815). Hb. Kew.

9. **Cerastium vulcanicum,** Schl. in Linnæa, xii. p. 208.

South Mexico, Peak of Orizaba, 10,000 to 12,000 feet (*Galeotti*, 4398), near the snow region (*Schiede*). Hb. Kew.

4. STELLARIA.

Stellaria, Linn. Gen. Plant. n. 568; Benth. et Hook. Gen. Plant. i. p. 149.

About seventy species, dispersed over nearly the whole world, but restricted to the mountains within the tropics.

1. **Stellaria? aristata,** Ser. in DC. Prodr. i. 396; Calques des Dess. Fl. Mex. 52.

Mexico (*Moçino & Sessé*).

This appears to be a *Drymaria.*

2. **Stellaria baldwini,** Fenzl, MSS. ex Peyritsch in Linnæa, xxx. p. 57.

South Mexico, Mirador, in savannas, at 3000 feet (*Heller*).

3. **Stellaria nemorum,** Linn. Sp. Pl. p. 603.

Stellaria cuspidata, Willd.

North and South Mexico, Sierra Madre (*Seemann*, 2145), Real del Monte (*Coulter*, 700), Desierto Viejo, valley of Mexico (*Bourgeau*, 1173), Toluca, 8000 feet (*Heller*); Costa Rica, near San José (*Polakowsky*).—All over Western South America. Hb. Kew.

Also in Europe, Asia, and West Africa.

4. **Stellaria ovata,** Willd. Berol. Mag. 1816, p. 196; DC. Prodr. i. p. 399.

South Mexico, near Jalapa (*Schiede & Deppe*); Costa Rica, damp meadows, San José, and in woods, Angostura (*Polakowsky*).—Andes of South America.

5. **Stellaria prostrata,** Baldw. in Ell. Sketch, i. p. 518.

Southern States of North America to—South Mexico, Real del Monte (*Coulter*, 700), Santa Fé (*Schaffner*, 2); Guatemala, Volcan de Fuego (*Salvin*), on walls (*Bernoulli*, 289). Hb. Kew.

6. **Stellaria,** sp.

South Mexico, Wartenberg, near Tantoyuca, Huasteca (*Ervendberg*, 194). Hb. Kew.

7. **Stellaria,** sp.

COSTA RICA (*Endres*, 38). Hb. Kew.

8. **Stellaria,** sp.

SOUTH MEXICO, Tacubaya, valley of Mexico (*Bourgeau*, 20), Orizaba (*Sallé*). Hb. Kew.

5. ARENARIA.

Arenaria, Linn. Gen. Plant. n. 569; Benth. et Hook. Gen. Plant. i. p. 150.

Upwards of 130 species, distributed nearly all over the world, but confined to lofty mountains within the tropics.

1. **Arenaria alsinoides,** Willd. in Mag. Gesell. Naturf. Freunde Berl. vii. p. 196.

Arenaria nemorosa, H. B. K. Nov. Gen. et Sp. vi. p. 35.

Arenaria diffusa, Elliott; *Mœhringia nemorosa,* Fenzl; *Stellaria elongata,* Nutt.; *Stellaria lanuginosa,* Torr. & Gray; *Micropetalon lanuginosum,* Pursh.

Common from NORTH CAROLINA to—MEXICO (*Coulter*, 703, 705, 694, 695; *Bourgeau*, 19, 281; *Jurgensen*, 347; *Mueller*, 957; *Galeotti*, 10,000 to 12,000 feet, 4399, 4397, 4413; *Botteri*, 1116; *Linden*, 940; *Schaffner*, 3; *Parry & Palmer*, 48); CENTRAL AMERICA (*Salvin & Godman*, 316; *Seemann*, 1174; *Bernoulli*, 186).—And in the WEST INDIES, and southward to PERU and BOLIVIA.

There may be several species mixed under this name.

2. **Arenaria bourgæi,** Hemsley, Diag. Pl. Nov. pars altera, p. 21.

Ramis debilibus procumbentibus parcissime pilosulis, foliis parvis distantibus lineari-oblongis, floribus solitariis axillaribus pedicellatis, pedicellis quam folia longioribus, sepalis glabris ovato-oblongis vel fere ellipticis margine diaphano-scariosis, petalis obovatis quam sepala duplo longioribus, filamentis filiformibus basi cohærentibus biglandulosis, glandulis prominentibus aurantiacis, capsula polysperma.

Herba procumbens; ramis debilibus procumbentibus angulatis, 3–12-pollicaribus, parcissime pilosulis. *Folia* sessilia et basi subamplexicaulia, linearia vel oblonga, circiter 3 lin. longa, obtusa vel subacuta, crassiuscula, obscure ciliolata. *Flores* albi, pentameri, circiter 4–5 lin. diametro, solitarii, axillares, pedicellati pedicellis gracilibus, 3–6 lin. longis; sepala glabra, ovato-oblonga vel fere elliptica, margine diaphano-scariosa; petala obovata, sepalis duplo longiora; stamina 10, filamentis filiformibus, basi cohærentibus biglandulosis, glandulis magnis aurantiacis; ovarium globosum, stylis 3 a basi liberis. *Semina* numerosa, reniformia, cinnamomea, nitida, obscure punctulata.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 62); SOUTH MEXICO, aqueduct of Chapultepec (*Bourgeau*, 22), and valley of Mexico, 280. Hb. Kew.

3. **Arenaria bryoides,** Willd. in H. B. K. Nov. Gen. et Sp. vi. p. 33.

Mountains of SOUTH MEXICO, peak of Orizaba, 12,450 feet (*Linden*, 938), on the borders of perpetual snow, Popocatepetl (*Aschenborn*, 730), Toluca, 14,000 to 15,000 feet (*Heller*), at 11,500 feet (*Humboldt & Bonpland*), Popocatepetl, up to the volcanic sand (*H. Christie*). Hb. Kew.

Var. **guatemalensis,** Hemsley, Diag. Pl. Nov. pars altera, p. 21. (Tab. IV. figg. 14–18.)

Foliis arctissime congestis crassis coriaceis valde concavis dorso carinatis basi tantum parcissime ciliolatis, floribus circiter 2 lineas longis, sepalis subcoriaceis concavis basi tantum parcissime ciliolatis, staminibus 10, ovario circiter 5-ovulato, stylis 3, capsula 3-valvi, valvis bifidis, seminibus 1–3 nitidis fusco-atris.

GUATEMALA, summit of Volcan de Fuego (*Salvin & Godman*, 224), Volcan de Fuego, at 13,000 feet (*Salvin*, 1873). Hb. Kew.

Although we have not seen authentically named specimens of *Arenaria bryoides*, Willd., we have no doubt that the Guatemala plant is at most no more than a variety of that species. It agrees almost exactly with the excellent description cited above, except that "folia enervia" is not applicable; but the meaning of this is not quite clear. The specimens collected by Linden (no. 938) on the Peak of Orizaba, and named *A. bryoides*, Willd., in Kew herbarium, differ from the Guatemala plant in having less crowded, thinner leaves, decidedly ciliate throughout their entire length, and in having smaller flowers with more prominently ciliate sepals.

EXPLANATION OF TAB. IV. FIGG. 14–18.

Fig. 14, tuft of the plant, nat. size; 15, leaves; 16, a flower; 17, calyx of same laid open to show insertion of stamens; 18, a seed: figures 15–18 very much enlarged.

4. **Arenaria decussata,** Willd. in H. B. K. Nov. Gen. et Sp. vi. p. 35.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 61); SOUTH MEXICO, Real del Monte (*Coulter*, 692); Moran (*Galeotti*, 4412), Chiapas (*Ghiesbreght*), Toluca, 8200 feet (*Heller*), at the foot of the Peak of Orizaba (*Schiede & Deppe*), valley of Mexico (*Schaffner*, 56). Hb. Kew.

5. **Arenaria leptophylla,** Schl. et Ch. in Linnæa, v. 233.

SOUTH MEXICO, at the foot of the Peak of Orizaba (*Schiede & Deppe*), Mineral del Monte (*Ehrenberg*).

6. **Arenaria lycopodioides,** Willd. in H. B. K. Nov. Gen. et Sp. vi. p. 34.

SOUTH MEXICO, near Moran, 8000 feet (*Humboldt & Bonpland*).

7. **Arenaria (Alsine) mexicana,** Bartl. in Presl, Reliq. Hænk. ii. p. 14.

MEXICO (*Hænke*).

8. **Arenaria ? molluginea,** Ser. in DC. Prodr. i. p. 400.

Alsine molluginea, Lag.

NEW SPAIN.

9. **Arenaria reptans,** Hemsley, Diag. Pl. Nov. pars altera, p 22.

Ramosa, ramis tenuibus debilibus reptantibus ad nodos radicantibus angulatis hispidulo-pilosis, foliis parvis obovato-oblongis, floribus solitariis axillaribus longiuscule pedicellatis apetalis, sepalis sæpissime 5 ovato-oblongis vel lanceolatis obtusis margine scariosis, capsula globosa polysperma.

Herba perennis (?), ramosa, plus minusve hispidulo-pilosa, ramis angulatis debilibus, 6–12 poll. longis, reptantibus, ad nodos radicantibus. *Folia* subsessilia, distantia, obovato-oblonga, circiter 3 lin. longa. *Flores* apetali, axillares, solitarii, 1–1½ lin. longi, pedicellati pedicellis gracilibus, 3–6 lin. longis; sepala 5 (vel interdum 4), ovato-oblonga vel lanceolata, obtusa, margine late scariosa, integra, dorso fere carinata, hispidula; stamina 10 (vel interdum 8), sepalis breviora, filamentis filiformibus; ovarium globosum, stylis 3, a basi distinctis. *Capsula* polysperma; semina compressa, longe funiculata.

South Mexico, valley of Mexico (*Schaffner*, 47 and 53). Hb. Kew.

10. **Arenaria scopulorum,** H. B. K. Nov. Gen. et Sp. vi. p. 31.

South Mexico, near the region of perpetual snow, on the peak of Orizaba (*Schiede & Deppe*), Toluca, 8800 feet (*Heller*).—Andes of Peru, &c.

11. **Arenaria,** sp. (affinis *A. striatæ*, Michx.).

South Mexico, Chiapas (*Ghiesbreght*, 821). Hb. Kew.

12. **Arenaria,** sp.

South Mexico, Real del Monte (*Coulter*, 702). Hb. Kew.

6. HYMENELLA.

Hymenella, Moç. et Sessé in DC. Prodr. i. p. 389; Benth. et Hook. Gen. Plant. i. p. 150 (under *Arenaria*).

The only species:—

1. **Hymenella mœhringioides,** Moç. et Sessé in DC. Prodr. i. p. 390.

Triplateia diffusa, Bartl. in Presl, Reliq. Hænk. ii. p. 11, t. 50.

South Mexico, Tacubaya, valley of Mexico (*Schaffner*, 42, 43), Santa Fé (*Bourgeau*, 272, 279), San Gerónimo (*Bourgeau*, 554), Morelia, 6000 to 7000 feet (*Galeotti*, 4417). Hb. Kew.

7. SAGINA.

Sagina, Linn. Gen. Plant. n. 176; Benth. et Hook. Gen. Plant. i. p. 151.

A genus of about eight species, inhabiting the temperate and cold regions of the Northern hemisphere, and one widely dispersed in the Southern hemisphere.

1. **Sagina linnæi,** Presl, Reliq. Hænk. ii. p. 14.

Spergula saginoides, Linn.

Var. β. **mexicana,** Presl, *l. c.*

Mexico (*Hœnke*).

2. **Sagina procumbens,** Linn. Sp. Pl. p. 185.

South Mexico, Vera Cruz to Orizaba (*Müller*). Hb. Kew.

A very widely dispersed plant in both hemispheres, and in northern and southern countries.

8. COLOBANTHUS.

Colobanthus, Bartl. in Presl, Reliq. Hænk. ii. p. 13; Benth. et Hook. Gen. Plant. i. p. 151.

A genus of about ten species, confined to the mountains and cold regions of South and Central America, Australia, and New Zealand.

1. **Colobanthus quitensis,** Bartl. in Presl, Reliq. Hænk. ii. p. 13, t. 49. fig. 2.

South Mexico, Peak of Orizaba, at 12,500 feet (*Galeotti*, 4404).—Andes of South America. Hb. Kew.

9. SPERGULA.

Spergula, Linn. Gen. Plant. n. 586; Benth. et Hook. Gen. Plant. i. p. 152.

This genus consists of two or three very widely dispersed weeds of cultivation, which will doubtless be found in Mexico.

1. **Spergula arenarioides,** Ser. in DC. Prodr. i. p. 395; Calques des Dess. Fl. Mex. 55.

Mexico (*Moçino & Sessé*).

Not a true *Spergula*; perhaps a species of *Arenaria*.

10. SPERGULARIA.

Spergularia, Pers. Syn. i. p. 504; Benth. et Hook. Gen. Plant. i. p. 152.

A small genus of three or four widely diffused species, growing chiefly on the sea-coast and in salt marshes; and the apparently new species described below.

1. **Spergularia neglecta,** Syme, Eng. Bot. ii. p. 129, t. 255.

Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 58). Hb. Kew.

This may be a distinct species; but in the present condition of the genus it is difficult to determine; moreover the specimens are small and stunted.

2. **Spergularia mexicana,** Hemsley, Diag. Pl. Nov. pars altera, p. 22.

Nana glabra ramosa, ramis gracillimis divaricatis, foliis angustissimis crassiusculis semiteretibus mucronatis patentibus, stipulis maximis scariosis, floribus parvis apetalis, sepalis oblongo-ellipticis uninerviis margine scariosis, staminibus sæpissime 5 interdum pluribus, stylis 3 brevissimis, capsula 3-valvi, seminibus numerosissimis apteris.

Herba perennis?, glabra, ramosa, exemplaria Parryana ad tripollicaria. *Rami* teretes, gracillimi, divaricati. *Folia* angustissima, crassiuscula, semiteretia, 4–6 lin. longa, mucronata, patentia, stipulis bracteisque albis, scariosis, ovatis acutis, circiter 2 lin. longis. *Flores* parvi, apetali, breviter pedicellati, in cymis paucifloris; sepala oblongo-elliptica, concava, circiter sesquilineam longa, uninervia, margine scariosa; stamina sæpissime 5 interdum plures; sepalis breviora; styli 3, brevissimi. *Capsula* trivalvis, seminibus numerosissimis, apteris scrobiculatis.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 52). Hb. Kew.

Tribe POLYCARPEÆ.

11. DRYMARIA.

Drymaria, Willd. ex Rœm. et Schultz, Syst. v. xxxi; Benth. et Hook. Gen. Plant. i. p. 152.

There are about twenty-five species indigenous in Tropical and Subtropical America; and one of them has also a wide range in the tropics of the Old World. There is also one endemic Australian species.

1. **Drymaria arenarioides,** Willd., Rœm. et Schultz, Syst. v. p. 406.
Drymaria frankenioides, H. B. K. Nov. Gen. et Sp. vi. p. 21, t. 515.

North Mexico, plains near the city of Chihuahua (*Thurber*), Arroyo, near the Rio Grande, in Chihuahua (*Parry*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 49); South Mexico, in sandy places near Pachuca, 7620 feet (*Humboldt & Bonpland*), Zimapan (*Coulter*, 698). Hb. Kew.

2. **Drymaria cordata,** Willd. in Rœm. et Schultz, Syst. Veg. v. p. 406.

Common in Subtropical North America and Mexico and Central America, including the following collectors' numbers:—*Parry & Palmer*, 57; *Galeotti*, 4416; *Bourgeau*, 2659; *Coulter*, 706, 709, 710; *Müller*, 120; *Tate*, 431; *Friedrichsthal*, 6; *S. Hayes*, 197; *Seemann*, 349. Hb. Kew.

Also generally dispersed in Tropical and Subtropical South America and the West Indies, as well as in Asia and Africa.

Var. **pilosa,** Schl. in Linnæa, xxvi. p. 374.
Mexico (*Schiede*).

3. **Drymaria effusa,** A. Gray, Pl. Wright. ii. p. 19.
North Mexico, hills near Santa Cruz, Sonora (*Thurber*). Hb. Kew.

4. **Drymaria glandulosa,** Bartl. in Presl, Reliq. Hænk. ii. p. 9.
North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 51); South Mexico, west coast (*Hænke*), province of Mexico (*Aschenborn*), Pedregal, valley of Mexico (*Bourgeau*, 283). Hb. Kew.

5. **Drymaria gracilis,** Ch. et Schl. in Linnæa, v. p. 232.
South Mexico, in shady places near Jalapa (*Schiede & Deppe*), cultivated specimen (Hb. Kew.), Toluca (*Berlandier*). Hb. Paris.

6. **Drymaria grandiflora,** Schl. in Linnæa, xii. p. 205.
Mexico (*Schiede & Deppe*).

7. **Drymaria hirsuta,** Bartl. in Presl, Reliq. Hænk. ii. p. 8.
Costa Rica, San José, Rio Reventazon, and Angostura (*Polakowsky*).—Peru.

8. **Drymaria laxiflora,** Benth. Pl. Hartw. p. 73.

South Mexico, Real del Monte (*Coulter*, 710); Guatemala, rocks near Zunil (*Hartweg*, 523). Hb. Kew.

9. **Drymaria leptoclados,** Hemsley, Diag. Pl. Nov. pars 1, p. 2. (Tab. III. figg. 1–7.)

Glabra, ramis gracillimis, foliis brevissime petiolatis membranaceis rotundato-ovatis cuspidato-acuminatis 5–7-nerviis, floribus fere sessilibus in cymulas densas terminales dispositis, sepalis mucronulatis, petalis angustissimis bipartitis, staminibus 5, capsulis oligospermis.

Herba annua, erecta, 3–6-pollicaris, glaberrima; ramis teretibus fere filiformibus, internodis elongatis. *Folia* brevissime, petiolata, membranacea, late ovato-rotundata, acuta vel mucronulata, 5–7-nervia, 3–5 lin. lata, stipulis setosis. *Flores* parvi, in cymas congestas terminales dispositi; sepala persistentia, paleacea, oblongo-lanceolata, mucronulata, ad 2 lin. longa, costa media prominente, nervis duobus lateralibus inconspicuis; petala angustissima, sepalis breviora, profunde bipartita; stamina 5? *Capsula* oblonga calycis fere longitudine, 3-valvis, oligosperma, seminibus minutis hippocrepiformibus punctulatis.

Guatemala, Camino del Sapote (*Bernoulli*, 240). Hb. Kew.

EXPLANATION OF TAB. III. Figg. 1–7.

Fig. 1, entire plant, natural size; 2, enlarged leaf; 3, enlarged flower; 4, calyx and petals removed, revealing the union of the filaments at the base; 5, a petal; 6, an ovary; 7, a seed. 5, 6, and 7, all enlarged.

10. **Drymaria nodosa,** Engelm. in A. Gray, Pl. Fendl. i. p. 12, in adnot.

North Mexico, Chihuahua (*Wislizenus*); South Mexico, Real del Monte (*Coulter*, 697), near Tacubaya, very rare (*Schaffner*). Hb. Kew.

Var.? **gracillima,** Hemsley, Diag. Pl. Nov. pars altera, p. 22.

Ramosissima, ramis valde filiformibus glaberrimis ad nodos tumidis, foliis linearibus planis, stipulis subulatis, floribus numerosissimis circiter 1 lin. longis, petalis quam sepala dimidio brevioribus, capsulis trivalvis, seminibus circiter 6.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 60). Hb. Kew.

11. **Drymaria palmeri,** n. sp. Hemsley, Diag. Pl. Nov. pars altera, p. 22.

Annua diffusa strigilloso-pilosa, ramis angulatis procumbentibus elongatis, foliis breviter petiolatis ovato-rotundatis vel basi leviter cordatis cuspidatis reticulato-venosis et nervo leviter intramarginali ornatis glabrescentibus crassiusculis, floribus grandiusculis in nodis solitariis sed vere terminalibus, sepalis oblongo-ellipticis quam petala duplo brevioribus, petalis latis profunde bilobatis venosis, staminibus 10, filamentis filiformibus, stylis 3, stigmatibus capitatis, capsula trivalvi, seminibus circiter 12 eleganter tuberculatis.

Herba annua, diffusa, strigilloso-pilosa; ramis angulatis, procumbentibus pedalibus vel ultra. *Folia* breviter petiolata, ovato-rotundata, basi rotundata vel leviter cordata, apice cuspidata, maxima 9 lin. diametro, reticulato-venosa et nervo leviter intramarginali ornata, glabrescentia, crassiuscula, margine undulata. *Flores* pentameri, albi, in nodis solitarii sed vere terminales, subuni-

laterales, pedunculati, pedunculis gracilibus ebracteatis 9–15 lin. longis; sepala oblongo-elliptica, sesquilin. longa, apice rotundata, extus parce pilosa; petala sepalis duplo longiora, venosa, lata, profunde bilobata, lobis divergentibus oblongis, apice rotundatis; stamina 10, filamentis filiformibus; styli 3, longiusculi, basi liberi, stigmatibus capitatis. *Capsula* oblonga, 3-valvis, calycem superante, seminibus circiter 12 reniformibus eleganter tuberculatis.

Mexico (*Palmer*, 1034) (*Harris*, 20). Hb. Kew.

12. **Drymaria palustris,** Ch. et Schl. in Linnæa, v. p. 232.

South Mexico, in marshy places near Jalapa (*Schiede & Deppe*).

13. **Drymaria pauciflora,** Bartl. in Presl, Reliq. Hænk. ii. p. 8.

Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 56).—Peru; Ecuador. Hb. Kew.

14. **Drymaria polycarpoides,** A. Gray, Pl. Fendl. i. p. 12, in adnot.

North Mexico, valley of Bolson de Mapimi (*Gregg*).

15. **Drymaria ramosissima,** Schl. in Linnæa, xii. p. 205.

South Mexico, near the city of Mexico (*Hegewisch, Mühlenpfordt*).

16. **Drymaria villosa,** Ch. et Schl. in Linnæa, v. p. 232.

South Mexico, the watery places near Jalapa (*Schiede & Deppe*); cultivated specimen in Hb. Kew.

17. **Drymaria xerophylla,** A. Gray, Pl. Wright. ii. p. 11, in adnot.; Hemsley, Diag. Pl. Nov. i. p. 2. (Tab. III. figg. 7–18.) 8/

Foliis sessilibus rigidis ovatis cuspidato-mucronatis venosis, floribus parvis cymulosis, cymulis in axillis foliorum fere sessilibus, petalis minimis integris (interdum emarginatis bilobatisve, *A. Gray*), staminibus 3, filamentis basi cohærentibus, capsula monosperma.

Herba decumbens, glaberrima (annua?), ramosa; ramis gracilibus virgatis. *Folia* rigida, sessilia, ovata, 3–6 lin. longa, cuspidato-mucronata, venosa, 3–5-nervia; stipulis setosis. *Flores* parvi, in cymulas axillares pauciflores parvi-bracteatas fere sessiles dispositi; sepala paleacea, persistentia, oblonga, mucronulata (obtusa, *A. Gray*), 1½ lin. longa, indistincte 3-nervia; petala anguste lineari-spathulata, ½ lin. longa, emarginata; stamina 3, petalis æquilonga, filamentis basi leviter dilatatis; ovarium 3-ovulatum (*A. Gray*); styli 3, brevi. *Capsula* globosa, 3-valvis, 1-sperma; semen minimum, punctulatum.

North Mexico*, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 50); South Mexico, Real del Monte (*Coulter*, 722). Hb. Kew.

EXPLANATION OF TAB. III. Figg. 8–13.

Fig. 8, portion of plant, natural size; 9, enlarged leaf; 10, enlarged flower; 11, the same spread open; 12, calyx removed, and the other parts much more enlarged; 13, a seed.

* Parry and Palmer's specimens were received after the Plate was drawn, and are much more vigorous than the plant represented, the stems being as much as 15 inches long, and the leaves nearly half an inch long and broad.

12

18. **Drymaria,** sp.

South Mexico, without locality (*Coulter*, 707). Hb. Kew.

19. **Drymaria,** sp. (? *D. glandulosa*, Bartl.).

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 55). Hb. Kew.

20. **Drymaria,** sp. ? (*Holosteum mucronatum*, Ser. in DC. Prodr. i. p. 393); DC., Calques des Dess. Fl. Mex. 53.

Mexico (*Moçino & Sessé*).

21. **Drymaria,** sp.

South Mexico, without locality (*Jurgensen*, 38). Hb. Kew.

22. **Drymaria,** sp.

South Mexico, Cordillera of Oaxaca, 7000 feet (*Galeotti*, 4408). Hb. Kew.

23. **Drymaria,** sp. ("*An var. pilosa D. cordatæ*?")

San Salvador (*Bernoulli*, 18). Hb. Kew.

12. CERDIA.

Cerdia, Moç. et Sessé in DC. Prodr. iii. p. 377; Benth. et Hook. Gen. Plant. i. p. 153.

This genus was based upon Moçino and Sessé's drawings; and, recently, Parry and Palmer have collected two species, both of which appear to be new. It is confined to Mexico.

1. **Cerdia congestiflora,** Hemsley, Diag. Pl. Nov. pars altera, p. 23. (Tab. IV. figg. 1–9.)

Cæspitosa, ramis adscendentibus, foliis stipulatis subteretibus apiculatis patentibus, pedunculis brevibus sæpissime 4–8-floris, floribus brevissime pedicellatis, sepalis inæqualibus subcarnosis ecarinatis margine fimbriatis, stamine 1, capsula 6–12-sperma, seminibus reniformibus minute reticulatis.

Herba annua, ramosa, glabra, circiter 3-pollicaris, ramis adscendentibus. *Folia* patentia, stipulata, subteretia, gracilia, usque 6 lin. longa, apiculata, stipulis minutis scariosis linearibus acutis. *Flores* cymosi, vel superiores interdum solitarii, brevissime pedicellati; cymæ sæpissime 4–8-floræ, bracteatæ, pedunculis brevissimis, bracteis scariosis acutissimis quam flores brevioribus; sepala inæqualia, subcarnosa, ecarinata, ovata acuta, 1–1½ lin. longa, margine scarioso-fimbriata; stamen 1, filamento filiformi; ovarium globosum, stylo breviter bifido. *Capsula* 6–12-sperma, seminibus reniformibus minute reticulatis.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 63½). Hb. Kew.

EXPLANATION OF TAB. IV. Figg. 1–9.

Fig. 1, a plant, natural size; 2, a branch; 3, an unexpanded flower; 4, an expanded flower; 5, a sepal; 6, an immature capsule; 7, the same, with part of the wall removed, showing the seeds; 8, a young seed; 9, a mature seed: figures 2–9 all more or less magnified.

2. **Cerdia glauca,** Hemsley, Diag. Pl. Nov. pars altera, p. 22. (Tab. IV. figg. 10–13.)

Cæspitosa, glauca, ramis erectis strictis, foliis exstipulatis subulatis apiculatis appressis, floribus pedunculatis solitariis axillaribus, pedunculis quam folia duplo brevioribus bibracteatis, sepalis æqualibus ovato-lanceolatis apiculatis carinatis margine scariosis integris, stamine 1 vel interdum 2, capsula 6–8-sperma.

Herba annua (?), cæspitosa, glabra, glauca, 3–5 poll. alta, ramis erectis strictis confertis. *Folia* exstipulata, approximata, lineari-subulata, apiculata, erecta, 2–3 lin. longa, basi leviter dilatata et amplexicaulia. *Flores* axillares, solitarii, pedunculati; pedunculi foliis duplo breviores, bibracteati, bracteis foliis similibus; sepala æqualia, ovato-lanceolata, circiter 1 lin. longa, apiculata, dorso carinata, margine scariosa integra; stamen 1, vel interdum 2, filamentis basi subito dilatatis; ovarium globosum, stylo breviter bifido. *Capsula* immatura facile in valvas 4 dividua, 6–8-sperma; semina matura a nobis non visa.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 63). Hb. Kew.

EXPLANATION OF TAB. IV. Figg. 10–13.

Fig. 10, a plant, natural size; 11, portion of a branch, enlarged; 12 and 13, enlarged flowers.

3. **Cerdia purpurascens,** Moç. et Sessé in DC. Prodr. iii. p. 377; Calques des Dess. Fl. Mex. 1092.

Mexico (*Moçino & Sessé*).

4. **Cerdia virescens,** Moç. et Sessé in DC. Prodr. iii. p. 377; Mém. Paron. p. 9, t. 2.

Mexico (*Moçino & Sessé*).

13. POLYCARPÆA.

Polycarpæa, Lam. in Journ. Hist. Nat. ii. p. 8, t. 25; Benth. et Hook. Gen. Plant. i. p. 154.

About twenty-five species, inhabiting warm countries, chiefly in the Old World. The following is probably not a true *Polycarpæa*.

1. **Polycarpæa cuspidata,** Schl. in Linnæa, xiii. p. 408.

South Mexico, Mineral del Monte (*Ehrenberg*).

Order XIX. PORTULACEÆ.

Portulaceæ, Benth. et Hook. Gen. Plant. i. p. 155.

Herbs or undershrubs, rarely shrubby. About 125 species, referred to fifteen genera, the majority American, South-African, and Australian; a few are scattered over Asia, North Africa, and Europe.

1. PORTULACA.

Portulaca, Linn. Gen. Plant. n. 603; Benth. et Hook. Gen. Plant. i. p. 156.

Herbs, some fleshy; about sixteen species, natives of tropical countries, principally American, two of which are widely diffused in cultivated and sandy ground in temperate regions.

1. **Portulaca oleracea,** Linn. Sp. Pl. p. 638; Schkuhr, Handb. t. 130.

Widely dispersed in tropical and subtropical regions, both in the OLD WORLD and AMERICA, including MEXICO and CENTRAL AMERICA. Hb. Kew.

2. **Portulaca pilosa,** Linn. Griseb. Fl. Brit. W. Ind. p. 57; Bot. Reg. t. 792.

? *Portulaca foliosa,* DC., Calques des Dess. Fl. Mex. 389, nec Lindley, Bot. Reg. t. 793.

NEW MEXICO; TEXAS.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 66), without locality (*Gregg*, 134); SOUTH MEXICO, Vera Cruz to Orizaba (*F. Müller*, 208), Pedregal (*Bourgeau*, 476); GUATEMALA, without locality (*Friedrichsthal*).—And southward to PERU and BRAZIL, as well as in the WEST INDIAN ISLANDS. Hb. Kew.

2. TALINOPSIS.

Talinopsis, A. Gray, Pl. Wright. i. p. 15; Benth. et Hook. Gen. Plant. i. p. 157.

At present limited to the following species:—

1. **Talinopsis frutescens,** A. Gray, Pl. Wright. i. p. 15, t. 3.

NEW MEXICO.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 67). Hb. Kew.

3. TALINUM.

Talinum, Adans. ex Juss. Gen. p. 312; Benth. et Hook. Gen. Pl. i. p. 157.

About a dozen species, herbs and undershrubs, natives of tropical and subtropical regions; two are African or Asiatic, and the rest American.

1. **Talinum aurantiacum,** Engelm. in A. Gray, Pl. Lindh. ii. p. 154.

TEXAS and NEW MEXICO to—NORTH MEXICO, sandy places, Sonora (*Schott, Thurber, Coulter*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 68), Monterey (*Edwards & Eaton*, 4); SOUTH MEXICO, Zimapan (*Coulter*, 714, 715). Hb. Kew.

2. **Talinum lineare,** H. B. K. Nov. Gen. et Sp. vi. p. 77.

SOUTH MEXICO, in dry places between Mexico and Real de Pachuca, and near Gasave in the valley of Tenochtitlan, 7380 feet (*Humboldt & Bonpland*).

3. **Talinum mexicanum,** Hemsley, Diag. Pl. Nov. pars altera, p. 23.

Pusillum, glaberrimum, caudice brevi crassiusculo subsimplici, foliis confertis linearibus (probabiliter semiteretibus vel triangulatis) crassis carnosis, floribus parvis aurantiacis, sepalis fere orbicularibus cito deciduis, petalis obovatis, staminibus 5, capsula globosa vel ovoidea, seminibus numerosis.

Herba suffrutescens glaberrima, 2–4-pollicaris, caudice crassiusculo subsimplici, apice tantum folioso. *Folia* conferta, carnosa, linearia (probabiliter semiteretia vel triangulata), acuta, 3–6 lin. longa. *Flores* parvi, aurantiaci, dichotomo-cymosi, cymis paucifloris, quam folia duplo triplove longioribus, pedunculis pedicellisque filiformibus, bracteis bracteolisque simillimis minutissimis squamiformibus; sepala fere orbicularia, lineam diametro, cito decidua; petala obovata(?), sepalis duplo longiora; stamina 5, filamentis filiformibus. *Capsula* globosa vel ovoidea, circiter sesquilineam diametro, seminibus numerosis, maturis a nobis non visis.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 69). Hb. Kew.

This species is closely allied to *T. parviflorum*, Nutt., of which we have seen no complete description; but it appears to differ in its yellow flowers, orbicular, early deciduous sepals, and small, nearly globose capsule. The specimens collected by Fendler (no. 71), named *T. parviflorum*, Nutt., by Dr. A. Gray, are very much like *T. mexicanum* in size and habit.

4. **Talinum napiforme,** DC. (*char. amplif.*), Hemsley, Diag. Pl. Nov. pars altera, p. 23.

Suffrutescens, glaberrimum, caudice crassissimo tuberiformi brevi subsimplici, apice tantum folioso, foliis confertis carnosis linearibus planis basi dilatatis, floribus albis, cymis laxis paucifloris longiuscule pedunculatis, pedunculis pedicellisque gracilibus, bracteis minutissimis, sepalis orbicularibus, petalis oblongo-ovatis, staminibus 5, capsula ovoidea polysperma.

Herba suffrutescens, glaberrima, 4–6-pollicaris, caudice crassissimo tuberiformi brevi, apice tantum folioso. *Folia* conferta, carnosa, linearia, plana, 1–2-pollicaria, obtusiuscula, basi dilatata. *Flores* albi, mediocres, dichotomo-cymosi, cymis axillaribus laxis, quam folia triplo longioribus, pedunculis pedicellisque gracilibus nudis, bracteis minutissimis; sepala orbicularia, concava, cito decidua, sesquilineam diametro; petala oblongo-obovata, sepalis duplo longiora; stamina 5, filamentis filiformibus; stylus trifidus, stigmatibus latis. *Capsula* 3-valvis, ovoidea, circiter 2 lin. longa, seminibus numerosissimis compressis.—*DC. Prodr.* ii. p. 357.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 70). Hb. Kew.

Parry and Palmer's specimens agree so well with the tracing (in the Kew Library) of the drawing upon which DeCandolle founded the species, that we do not hesitate to refer it to that species.

5. **Talinum patens,** Willd. Sp. Pl. ii. p. 863; Jacq. Hort. Vindob. ii. t. 151.

Talinum paniculatum, Jacq.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 71); South Mexico, Zimapan (*Coulter*, 1290), valley of Cordova (*Bourgeau*, 1618), Orizaba

(*Botteri*), near Regla (*Galeotti*, 7208).—Also widely spread in SOUTH AMERICA and the WEST INDIES. Hb. Kew.

This species also occurs in some of the Pacific Islands.

6. **Talinum reflexum,** Cav. Ic. i. p. 1. t. 1; Bot. Mag. t. 1543.

TEXAS, NEW MEXICO to—NORTH MEXICO, along the Rio Grande from El Paso to Presidio del Porte.—Also in BRAZIL.

4. CALANDRINIA.

Calandrinia, H. B. K. Nov. Gen. et Sp. vi. p. 77, t. 526; Benth. et Hook. Gen. Plant. i. p. 158.

Annual and perennial herbs, sometimes woody at the base. About sixty species are known, whereof sixteen are Australian and the remainder American.

1. **Calandrinia caulescens,** H. B. K. Nov. Gen. et Sp. vi. p. 78, t. 526.

MEXICO (*Palmer*, 1032).—COLOMBIA, PERU, BOLIVIA. Hb. Kew.

2. **Calandrinia megarhiza,** Hemsley, Diag. Pl. Nov. pars altera, p. 23.

Acaulis, radice pergrandi tuberiformi, basi pauciramosa, ramis crassis longissimis, foliis cæspitosis linearibus carnosis, pedunculis (an semper?) unifloris quam folia brevioribus, sepalis ovato-lanceolatis apice leviter cucullatis persistentibus capsulam includentibus, seminibus 10–15 lenticularibus atris nitidis estrophiolatis.

Herba perennis, acaulis, glabra. *Radix* pergrandis, tuberiformis, siccata sesquipoll. diametro, basi pauciramosa, ramis crassis usque sesquipedalibus. *Folia* dense cæspitosa, carnosa, linearia 1½–2-pollicaria. *Pedunculi* uniflori (vel interdum triflori?), foliis breviores; sepala 2, ovato-lanceolata, 5–6 lin. longa, apice leviter cucullata, persistentia, capsulam dimidio breviorem includentia; petala et stamina perfecta non visa. *Capsula* subglobosa; semina matura 10–15, lenticularia, atra, nitida, minute punctata, estrophiolata.

GUATEMALA, Volcan de Fuego, 11,000 to 12,000 feet (*Salvin*). Hb. Kew.

3. **Calandrinia tuberosa,** Benth. Pl. Hartw. p. 9.

NORTH MEXICO, Zacatecas (*Hartweg*, 43).

5. CLAYTONIA.

Claytonia, Linn. Gen. Plant. n. 287; Benth. et Hook. Gen. Plant. i. p. 158.

Annual or perennial, often succulent herbs. About twenty species—one in Australia and New Zealand, the rest in Temperate, Frigid, and Subtropical North America, especially in the west, and of North-eastern Asia.

1. **Claytonia perfoliata,** Donn, Cat. ed. 4. p. 50; Bot. Mag. t. 1336.

Temperate NORTH AMERICA to—SOUTH MEXICO, Oaxaca (*Galeotti*, 3611), valley of Mexico (*Bourgeau*), forests of the Desierto Viejo (*Bourgeau*, 887). Hb. Kew.

Naturalized in some parts of Europe and other countries.

6. MONTIA.

Montia, Linn. Gen. Plant. n. 101; Benth. et Hook. Gen. Plant. i. p. 159.

Only one species (or, according to some authors, three), a dwarf amphibious annual herb found in nearly all temperate and cold regions of the world.

1. **Montia fontana,** Linn. Sp. Pl. p. 129.

SOUTH MEXICO, peak of Orizaba (*Galeotti,* 4403). Hb. Kew.

Order XX. TAMARISCINEÆ.

Tamariscineæ, Benth. et Hook. Gen. Plant. i. p. 159.

Shrubs, undershrubs, or sometimes arboreous. There are five genera, numbering altogether nearly fifty species. With the exception of the genus given below, they are all natives of the Old World.

Tribe FOQUIEREÆ.

This tribe is limited to the following genus:—

1. FOQUIERA.

Foquiera, H. B. K. Nov. Gen. et Sp. vi. p. 81; Benth. et Hook. Gen. Plant. i. p. 161.

Spiny shrubs, restricted to Mexico and the countries lying immediately north of it. The following are all the species known.

1. **Foquiera formosa,** H. B. K. Nov. Gen. et Sp. v. p. 83, t. 527.

Philetæria horrida, Liebm.

SOUTH MEXICO, Province of Mexico (*Humboldt & Bonpland*), valley of Mexico (*Bourgeau,* 1120), without locality (*Sheppard*). Hb. Kew.

2. **Foquiera spinosa,** Torr. in Emory's Rep. p. 147, t. 8.

Bronnia spinosa, H. B. K. Nov. Gen. et Sp. vi. p. 84, t. 528.

NORTH MEXICO, Sonora Alta (*Coulter,* 919), Rayon, Sonora (*Thurber,* 952); SOUTH MEXICO, near Puente de la Madre de Dios, 5280 feet (*Humboldt & Bonpland*). Hb. Kew.

3. **Foquiera splendens,** Engelm. Pl. Wisliz. p. 14.

TEXAS and LOWER CALIFORNIA to—SOUTH MEXICO, Mitla, Oaxaca (*Andrieux,* 365). Hb. Kew.

[ELATINEÆ, a small family, consisting of two genera and about twenty species of herbs (sometimes aquatic or amphibious) and undershrubs, scattered nearly all over the world. *Elatine americana,* Arnott, has a wide distribution in South America, and also occurs in California, Texas, and in several of the Atlantic States of North America; but we have seen no specimens from Mexico or Central America, though it possibly occurs there. It also grows in Australia and some of the islands of the Pacific.]

Order XXI. HYPERICINEÆ.

Hypericineæ, Benth. et Hook. Gen. Plant. i. p. 163.

Herbs, shrubs, or rarely trees. About 200 species, belonging to eight genera, distributed over nearly all temperate and subtropical regions.

1. ASCYRUM.

Ascyrum, Linn. Gen. Plant. i. no. 903; Benth. et Hook. Gen. Plant. i. p. 165.

Undershrubs. About half a dozen species, confined to the West Indies and North and Central America.

1. **Ascyrum crux-andreæ,** Linn. Sp. Pl. p. 1107; Plum. ed. Burm. t. 152. fig. 2.

Southern States of North America, and some of the West Indian Islands to—South Mexico, Jalapa (*Linden*, 861; *Galeotti*), Ciudad Real, Chiapas (*Linden*). Hb. Kew.

2. **Ascyrum hypericoides,** Linn. Sp. Pl. p. 1108; Plum. ed. Burm. t. 152. fig. 1.

South Mexico, in thickets near Jalapa, Cerro Colorado (*Schiede & Deppe*), oak-forests, Oaxaca, at 4000 to 5500 feet (*Galeotti*).—Bermudas and Guiana (*Grisebach*). Hb. Kew.

2. HYPERICUM.

Hypericum, Linn. Gen. Plant. no. 902; Benth. et Hook. Gen. Plant. i. p. 165.

Herbs or shrubs. Upwards of 150 species, widely dispersed in the northern temperate regions, and numerous in the mountains within the tropics, rare in southern temperate countries. A thorough revision of the species would probably reduce the number for Central America and Mexico by nearly half.

1. **Hypericum canadense,** Linn. Sp. Pl. p. 1104.

Canada to—Mexico, near Tantoyuca (*Ervendberg*, 218). Hb. Kew.

Choisy (in DC. Prodr. i. p. 550), says, "Varietates hujus mihi videntur *H. thesiifolium*, *pauciflorum*, et *moranense*, H. B. K."

2. **Hypericum collinum,** Schl. et Ch. in Linnæa, v. p. 219.

South Mexico, between San Miguel and La Joya (*Schiede*), near Jalapa, Cerro Colorado (*Schiede & Deppe*), Vera Cruz to Orizaba (*Müller*, 1737). Hb. Kew.

3. **Hypericum denticulatum,** H. B. K. Nov. Gen. et Sp. v. p. 191, t. 458.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*); South Mexico, near Guanaxuato (*Humboldt & Bonpland*). Hb. Kew.

4. **Hypericum fastigiatum,** H. B. K. Nov. Gen. et Sp. v. p. 195.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 73); South Mexico, near Pazcuaro, 6780 feet (*Humboldt & Bonpland*), province of Mexico (*Aschenborn*), Real del Monte (*Coulter*, 751, 752). Hb. Kew.

5. **Hypericum formosum,** H. B. K. Nov. Gen. et Sp. v. p. 196, t. 460.

New Mexico to—North Mexico, Santa Cruz, Sonora (*Thurber*); South Mexico, near Pazcuaro (*Humboldt & Bonpland*), between San Miguel del Soldado and La Joya (*Schiede*), peak of Orizaba (*Galeotti*, 4181), near the city of Mexico (*Bourgeau*, 693), Chiapas (*Ghiesbreght*), Vera Cruz to Orizaba (*F. Müller*, 196). Hb. Kew.

6. **Hypericum gnidioides,** Seem. Bot. Voy. 'Herald,' p. 88, t. 27.

Panama, Boquete, Veraguas (*Seemann*, 1640); southward to Peru. Hb. Kew.

[**Hypericum mexicanum,** Linn. Amœn. viii. p. 322, t. 8. fig. 5.

According to Planchon and Triana (Prodr. Fl. N. Gran.), this is the same as *H. mutisianum*, a New-Granadian plant, and does not occur in Mexico.]

7. **Hypericum moranense,** H. B. K. Nov. Gen. et Sp. v. p. 193.

South Mexico, near Moran, 8000 feet (*Humboldt & Bonpland*).

8. **Hypericum mutilum,** Linn. Syst. ii. p. 11.

Hypericum quinquenervium, Walt.
Hypericum euphorbioides, St.-Hil.
Hypericum stellarioides, H. B. K.

Canada to—South Mexico, on the banks of rivers and in marshes near Jalapa (*Schiede*), Vera Cruz to Orizaba (*Müller*).—Southward to Brazil. Hb. Kew.

There is probably some confusion in this species.

9. **Hypericum paniculatum,** H. B. K. Nov. Gen. et Sp. v. p. 195, t. 459.

South Mexico, near Ario, between Pazcuaro and Plaza de Jorullo, 5940 feet (*Humboldt & Bonpland*).

10. **Hypericum pauciflorum,** H. B. K. Nov. Gen. et Sp. v. p. 192.

South Mexico, between Santa Rosa and Guanaxuato, 9000 feet (*Humboldt & Bonpland*), Cordillera of Oaxaca, 5000 feet (*Galeotti*, 4188). Hb. Kew.

11. **Hypericum philonotis,** Schl. et Ch. in Linnæa, v. p. 219.

South Mexico, in moist places near Jalapa (*Schiede & Deppe*), without locality (*Mackenzie*). Hb. Kew.

12. **Hypericum pratense,** Schl. et Ch. in Linnæa, v. p. 218.

South Mexico, in grassy places near Jalapa (*Schiede & Deppe*), Mexico (*Aschenborn*), Toluca, 8200 feet (*Heller*, 254).

13. **Hypericum scouleri,** Hook. Fl. Bor.-Am. i. p. 111.

Temperate North-west America down to—North Mexico, Sonora (*Thurber*). Hb. Kew.

14. **Hypericum,** sp.

Guatemala (*Friedrichsthal*).—Venezuela. Hb. Kew.

15. **Hypericum,** sp.

South Mexico, Real del Monte (*Coulter*, 753). Hb. Kew.

16. **Hypericum,** sp. (aff. *H. formoso*).

South Mexico, valley near Santa Fé (*Bourgeau*, 693 bis). Hb. Kew.

17. **Hypericum,** sp.

South Mexico, Orizaba (*Botteri*, 576; *Bourgeau*, 2626). Hb. Kew.

3. VISMIA.

Vismia, Vell. ex DC. Prodr. i. p. 542; Benth. et Hook. Gen. Plant. i. p. 166.

Shrubs or trees, about twenty species, four of which occur in Western Tropical Africa, all the others being confined to the warmer parts of America.

1. **Vismia billbergiana,** Beurling, in Vetensk. Akad. Hand. 1854, p. 117.

Panama, in mountains (*Billberg*).

2. **Vismia dealbata,** H. B. K. Nov. Gen. et Sp. v. p. 184, t. 454.

Vismia baccifera, Pl. et Tr.

Panama, in meadows near the city of Panama (*Seemann*, 555), Chagres (*Fendler*, 7). —Colombia, Guiana, and North Brazil. Hb. Kew.

3. **Vismia latifolia,** Choisy in DC. in Prodr., non H. B. K.

Panama (*Seemann*).—Colombia.

4. **Vismia macrophylla,** H. B. K. Nov. Gen. et Sp. v. p. 184.

Panama, Chagres (*Fendler*, 8), Bay of Panama (*Barclay*).—South America and the West Indies. Hb. Kew.

5. **Vismia mexicana,** Schl. in Linnæa, x. p. 245.

South Mexico, province of Mexico (*Hahn*, *Bourgeau*, *Galeotti*), Hacienda de la Laguna (*Schiede*). Hb. Kew.

6. **Vismia panamensis,** Duch. et Walp. in Linnæa, xxiii. p. 748.

Panama (*Duchassaing*). Hb. Monsp. = dealbata

7. **Vismia viridiflora,** Duch. ex Pl. et Tr. in Ann. Sc. Nat. série 4, xviii. p. 305.

Vismia guianensis, Seem., non Choisy.

Panama, in shady places near the city of Panama (*Seemann*, *S. Hayes*, 560). Hb. Kew.

8. **Vismia,** sp.

PANAMA, Chagres (*Fendler*, 6). Hb. Kew.

Order XXII. GUTTIFERÆ.

Guttiferæ, Benth. et Hook. Gen. Plant. i. p. 167.

Trees or shrubs, sometimes epiphytal. About 230 species, belonging to twenty-five genera, all natives of tropical or subtropical regions, chiefly in America and Asia.

1. CLUSIA.

Clusia, Linn. Gen. Plant. n. 1154; Benth. et Hook. Gen. Plant. i. p. 170.

Trees or shrubs, many of them epiphytes. Upwards of fifty species are known, all natives of Tropical and Subtropical America.

1. **Clusia acuminata,** Pl. et Tr. Mém. Gutt. p. 53.

Renggeria acuminata, Seem.

PANAMA (*Seemann*). Hb. Kew.

2. **Clusia guatemalensis,** Hemsley, Diag. Pl. Nov. pars 1, p. 2.

Arborescens, foliis vix coriaceis venosis longe petiolatis lanceolatis acuminatis obtusis basi valde attenuatis, cymis plurifloris terminalibus lateralibusve, floribus pedicellatis, sepalis petalisque 4, filamentis liberis crassis.

Arbor ornata (*Salvin*), ramis crassis. *Folia* longe petiolata, vix coriacea, lanceolata, 4–6-pollicaria, subito acuminata, obtusa, basi gradatim attenuata, petiolo usque pollicari, venis lateralibus confertis (prominentibus in siccis) versus apicem excurrentibus. *Flores* ♂ (rosei?) basi bibracteolati, pedicellati, 1–1¼ poll. diametro, in cymas trichotomas pedunculatas bracteatas dispositi, cymis 2–3-pollicaribus, 3–12-floris, pedicellis sæpissime 2–3 lin. longis, basi bracteatis, bracteis triangularibus acutis 1–2 lin. longis, bracteolis bracteis simillimis; sepala 4, decussata, fere orbicularia, 2 exteriora multo minora; petala 4, æqualia, obovato-oblonga, basi lata; stamina numerosissima, congesta, filamentis liberis brevibus crassis, antheris magnis bilocularibus, connectivo mutico. *Flores* ♀ ignoti.

GUATEMALA, Barranca Honda, Volcan de Fuego, at 3800 feet (*Salvin*). Hb. Kew.

This species belongs to the small section *Stauroclusia* (Planchon et Triana, in Ann. Sc. Nat. sér. 4, vol. xiii. p. 351), and is easily distinguished by its foliage and small, apparently red, flowers, &c.

3. **Clusia minor,** Linn. Sp. Pl. ed. 1, p. 510.

Clusia venosa, Linn.

Clusia pratensis, Seem.

? GUATEMALA, Volcan de Fuego (*Salvin*); PANAMA, very common in savannas (*Seemann*, *Duchassaing*).—Also widely spread in the WEST INDIES, VENEZUELA, and COLOMBIA. Hb. Kew.

4. **Clusia odorata,** Seem. Bot. Voy. 'Herald,' p. 89; Bot. Mag. t. 5865.

Panama, Boquete, Veraguas (*Seemann*, 1638), near the city of Panama (*S. Hayes*, 402). Hb. Kew.

5. **Clusia ovigera,** Pl. et Tr. Mém. Gutt. p. 49.

South Mexico (*Ghiesbreght*). Hb. Paris.

6. **Clusia orizabæ,** Hemsley, Diag. Pl. Nov. pars 1, p. 3.

Arborescens (?), ramis crassis, foliis coriaceis longe petiolatis ellipticis lanceolatisve obtusis basi cuneatis, cymis subtrifloris, sepalis petalisque 4 decussatis, filamentis crassis.

Arbor? ramis crassis. *Folia* longe petiolata, coriacea, lanceolata-elliptica, 4–6 poll. longa, obtusissima vel fere rotundata, basi cuneata, venis lateralibus prominentibus, petiolo crasso usque pollicari. *Flores* ♂ pedicellati, basi bibracteolati, $1\frac{1}{2}$–$1\frac{3}{4}$ poll. diametro, in cymas bracteatas dispositi, cymis trifloris (probabiliter interdum plurifloris), pedicellis crassis, 6–9 lin. longis, sæpius medio bibracteatis, bracteis bracteolisque cucullato-orbicularibus $1\frac{1}{2}$–2 lin. latis; sepala 4, decussata, fere orbicularia, 2 exteriora multo minora; petala 4, æqualia, obovato-spathulata vel obovato-oblonga; stamina numerosissima, congesta, filamentis liberis, brevibus, crassis; antheris bilocularibus, connectivo mutico. *Flores* ♀ ignoti.

South Mexico, Izhuatlancillo, region of Orizaba (*Bourgeau*, 2967). Hb. Kew.

This also belongs to the section *Stauroclusia*, and is closely allied to our *C. guatemalensis*, differing in its more leathery broader leaves and larger flowers. The colour of the latter is not indicated.

7. **Clusia rosea,** Linn. Sp. Pl. p. 1495; Schl. in Linnæa, viii. t. 4.

Clusia retusa, Poir, Lam. Ill. t. 852.

Panama, the savannas about the city of Panama and town of Nata (*Seemann*).—Also in the West Indies and northern parts of South America. Hb. Kew.

8. **Clusia,** sp.

South Mexico, valley of Cordova (*Bourgeau*, 1957). Hb. Kew.

9. **Clusia,** sp.?

Guatemala, ridge above Calderas, Volcan de Fuego, at 8300 feet (*Salvin*). Hb. Kew.

10. **Clusia,** sp.

South Mexico, valley of Cordova (*Bourgeau*, 1890). Hb. Kew.

11. **Clusia,** sp.

South Mexico, valley of Cordova (*Bourgeau*, 1954). Hb. Kew.

12. **Clusia,** sp.

South Mexico, Potrero, near Cordova (*Bourgeau*, 1891). Hb. Kew.

2. CHRYSOCHLAMYS.

Chrysochlamys, Pöpp. et Endl. Nov. Gen. et Sp. iii. p. 13, t. 211; Benth. et Hook. Gen. Plant. i. p. 172; *Tovomitopsis*, Planch.

About twelve arboreous species, all Tropical-American.

1. **Chrysochlamys costa-ricana**, Hemsl.

Tovomitopsis costa-ricana, Œrst. in Planch. et Tr. Mém. Gutt. p. 111.

COSTA RICA, Turrialva (*Œrsted*).

2. **Chrysochlamys glauca**, Hemsl.

Tovomitopsis glauca, Œrst. *l. c.* p. 109.

COSTA RICA (*Œrsted*).

3. **Chrysochlamys membranacea**, Pl. et Tr. Mém. Gutt. p. 105.

PANAMA, Lion-Hill railway-station (*S. Hayes*).—COLOMBIA. Hb. Kew.

4. **Chrysochlamys nicaraguensis**, Hemsl.

Tovomitopsis nicaraguensis, Œrst. *l. c.* p. 112.

NICARAGUA, on the river San Juan (*Œrsted*).

5. **Chrysochlamys psychotriæfolia**, Hemsl.

Tovomitopsis psychotriæfolia, Œrst. *l. c.* p. 108.

COSTA RICA, Turrialva (*Œrsted*).

3. SYMPHONIA.

Symphonia, Linn. f. Suppl. pp. 49 et 203; Benth. et Hook. Gen. Plant. i. p. 173.

Trees or shrubs, six species—five in Madagascar, and the following in Africa and America:—

1. **Symphonia globulifera**, Linn. fil. Suppl. p. 302.

Moronobea globulifera, Schl.
Moronobea coccinea, Aubl., in part.

PANAMA, Chagres (*Fendler*, 216), Lion-Hill railway-station (*S. Hayes*, 363).—WEST INDIES and tropical SOUTH AMERICA to BRAZIL. Hb. Kew.

This species is also found in WESTERN TROPICAL AFRICA.

4. TOVOMITA.

Tovomita, Aubl. Pl. Guian. p. 956, t. 364; Benth. et Hook. Gen. Plant. i. p. 173.

Trees and shrubs, about twenty-two species, restricted to Tropical America, the following being the only one collected within our region:—

1. **Tovomita stylosa,** Hemsley, Diag. Pl. Nov. pars 1, p. 3. (Tab. V.)

Glabra, ramis teretibus gracilibus ad apices tantum foliosis, foliis petiolatis membranaceis lanceolatis ovatis ellipticisve obtusis transversim pellucido-lineatis, floribus monoicis di- trichotome cymosis, sepalis 2 petalisque lineari-lanceolatis tenuissimis, petalis 4, stylis elongatis divergentibus.

Frutex vel *arbor* parva glaberrima, ramis teretibus gracilibus ad apices tantum foliosis. *Folia* petiolata membranacea, ovato-lanceolata vel elliptica, 3–6 poll. longa, acuminata obtusa vel subacuta, basi cuneata, integra, costa ad margines lineis immersis contiguis pellucidis undulatis continuatis notata, venis reticulatis utrinque inconspicuis, petiolo 3–6 lin. longo. *Flores* monoici, pedicellati, in cymas di- trichotomas (femineas subtrifloras, masculinas multoties ramosas) axillares vel terminales parvibracteolatas dispositi, pedicellis basi et ad medium bibracteolatis basi articulatis, florum femineorum longioribus, bracteis minutis triangularibus acutis oppositis, sepalis 2 petalisque tenuissimis, petalis 4, staminibus numerosissimis. *Florum masculinorum* sepala lineari-lanceolata, acuta, 3–4 lin. longa; petala lineari-oblonga, fere obtusa, sepalis æquilonga; stamina petalis paulo breviora, filamentis filiformibus inæquilongis, basi leviter cohærentibus; ovarium rudimentarium, estylosum, apice obscure 4-lobatum. *Florum femineorum* sepala ovato-lanceolata; stamina, præter antheras, omnino (?) vacuis sicut in masculinis; ovarium 4-loculare, loculis uniovulatis, stylis liberis staminibus æquilongis, stigmate parvo. *Fructus* maturus mihi ignotus.

Panama, Chagres (*Fendler*, 298, male flowers only), Lion-Hill station, Panama railway (*S. Hayes*, 367). Hb. Kew.

The sepals and petals are so extremely thin that it is possible they are not quite correctly drawn or described.

EXPLANATION OF TAB. V.

Portion of male and female plants, of the natural size.

Fig. 1, a male flower, enlarged; 2, rudimentary ovary of the same; 3, stamens, filaments cohering at the base; 4, immature fruit; 5, vertical section of the same; 6, cross section of the same; 7, portion of leaf, magnified to show the pellucid lines.

5. RHEEDIA.

Rheedia, Linn. Gen. Plant. n. 641; Benth. et Hook. Gen. Plant. i. p. 175.

About twenty arborescent species—two natives of Madagascar, and the remainder of Tropical America.

1. **Rheedia edulis,** Pl. et Tr. Mém. Gutt. p. 155.

Calophyllum edule, Seem.

Panama, dense forests near Remedios, Veraguas (*Seemann*). Hb. Kew.

2. **Rheedia,** sp.

Panama, in woods near the city of Panama (*S. Hayes*, 738). Hb. Kew.

3. **Rheedia,** sp. (? *R. lateriflora*, Linn.).

Panama, Remedios, Veraguas (*Seemann*, 1637). Hb. Kew.

6. CALOPHYLLUM.

Calophyllum, Linn. Gen. Plant. n. 658; Benth. et Hook. Gen. Plant. i. p. 175.

About thirty-five arboreous species—five Tropical-American, and the remainder Asiatic.

1. **Calophyllum ? longifolium,** Willd. in Mag. der Gesell. naturf. Freunde, 1811, p. 80; H. B. K. Nov. Gen. et Sp. v. p. 202.

PANAMA (Herb. Facult. Sc. Monsp.).—PERU.

7. MAMMEA.

Mammea, Linn. Gen. Plant. n. 656; Benth. et Hook. Gen. Plant. i. p. 176.

Seven arboreous species have been described, one of which is American, and the others inhabit Africa, Madagascar, and Tropical Asia.

1. **Mammea americana,** Linn. Sp. Pl. ed. 1, p. 512; Jacq. Amer. t. 248.

PANAMA, Isle of Taboga (*Seemann,* 1091).—WEST INDIES, COLOMBIA, and Eastern SOUTH AMERICA, to BRAZIL. Hb. Kew.

2. **Mammea emarginata,** DC. Prodr. i. p. 561; Calques des Dess. Fl. Mex. 144.

MEXICO.

A doubtful plant, apparently not mentioned by Planchon and Triana.

Order XXIII. TERNSTRŒMIACEÆ.

Ternstrœmiaceæ, Benth. et Hook. Gen. Plant. i. p. 177.

Trees or shrubs, rarely climbing or epiphytal. Upwards of 260 species, belonging to thirty-five genera, nearly all natives of tropical countries, both in Asia and America. A few are African; and a few occur in Temperate North America and North-eastern Asia. The family is apparently not represented either in Australia or New Zealand.

Tribe MARCGRAVIEÆ.

This tribe is restricted to Tropical America. Delpino ('Nuovo Giornale Botanico Italiano,' i. pp. 257–290) has given a monographic review of the species known to him; and Dr. Wittmack has more recently monographed the group in the 'Flora Brasiliensis,' fasc. lxxxi. pp. 214–258, tabb. 40–51.

1. MARCGRAVIA.

Marcgravia, Linn. Gen. Plant. n. 640; Benth. et Hook. Gen. Plant. i. p. 181; Delpino, Nuov. Giorn. Bot. Ital. i. p. 284.

Epiphytal or climbing shrubs, rarely arboreous. Delpino reduces the number of forms known to him to four species; but there are about a dozen distinct ones at Kew,

dispersed over the eastern side of Tropical America, from South Brazil through Guiana, Venezuela, and New Granada, to Nicaragua; and two or three species extend to Cuba and Jamaica. Dr. Wittmack (Fl. Bras. fasc. lxxxi. p. 258) enumerates fifteen species.

1. **Marcgravia affinis,** Hemsley, Diag. Pl. Nov. pars 1, p. 3. (Tab. VI. figg. 7–12.)

Glabra, ramis gracilibus angulatis lenticellatis, foliis brevissime petiolatis longe acuminatis, umbellis 10–15-floris, floribus minimis, amphoris parvis.

Frutex glaber, epiphyticus, ramis fertilibus gracilibus angulatis, lenticellis albis conspersis. *Folia* fertilium ramorum fere sessilia, subcoriacea, lanceolata, 2–3 poll. longa, caudato-acuminata, minute cuspidata, reticulata, tota minute pellucido-punctata, costa media utrinque elevata. *Umbellæ* pendentes, 10–15-floræ, pedicellis gracilibus glabris, 9–12 lin. longis, patentibus, 3–5 interioribus sterilibus bracteis cucullatis adnatis. *Amphoræ*, seu bracteæ cucullatæ, 3–5, parvæ, ad 2 lin. profundæ, dorso flores steriles non gerentes. *Flores* viridi, $1\frac{1}{2}$ lin. longi; sepala concava, rotundata; corolla calyptrata, conica, obtusa; stamina ad 12, inæqualia; ovarium sulcatum, stylo brevi.

Costa Rica, without any locality (*Endres*, 185). Hb. Kew.

EXPLANATION OF TAB. VI. Figg. 7–12.

Fig. 7, a flowering branch, of the natural size; 8, an enlarged bract; 9, an enlarged flower; 10, a vertical section of the same; 11, an ovary; 12, a cross section of the same.

Closely allied to *M. caudata*, Planch. et Tr., a native of Colombia. Possibly it may be the same; for, excepting in dimensions, their description includes nearly all the characteristics of the present plant. *P. caudata* is described as having leaves 4–6 inches long; but nothing is said of angular branches or unusually small flowers.

2. **Marcgravia nepenthoides,** Seem. (Tab. VI. figg. 1–6.)

Glabra, foliis oblongo-lanceolatis acutis breviter petiolatis, floribus numerosis in umbellas racemosas terminales pendentes dispositis, amphoris maximis.

Frutex glaber, scandens, 20 ped. altus, ramulis pendentibus. *Folia* fertilium ramorum breviter petiolata, coriacea, oblongo-lanceolata, 4–6-poll., acute acuminata, integerrima, venis inconspicuis. *Umbellæ* pendentes, 20–25-floræ, pedicellis furfuraceis lenticellatis ultrapollicaribus, fertilibus patentibus infra calycem bibracteolatis, 5–6, interioribus longioribus, sterilibus rectis, bracteis cucullatis adnatis. *Amphoræ*, seu bracteæ cucullatæ, melliferæ, ad 1 poll. profundæ, dorso flores steriles gerentes. *Flores* nutantes, sepalis late rotundatis, corolla calyptrata conica.—*Journ. Bot.* viii. (1870) p. 245.

Nicaragua, frequent in the Chontales mountains, about the Javali Mine, and at the summit of Peña Blanca, about 2500 feet above the level of the sea (*Seemann*). Hb. Kew.

EXPLANATION OF TAB. VI. Figg. 1–6.

Fig. 1, flowering branch, slightly reduced; 2, a flower, enlarged; 3, a longitudinal section of the same; 4, a stamen; 5, an ovary; 6, a cross section of the same.

This has the largest pitchers of any described species of the genus. The specimens we have seen are very much shrivelled; but Seemann states (*l. c.*) that they are about the size of those of *Cephalotus*, though much more fleshy and substantial, and of a green colour blotched with a dull reddish brown.

Since our Plate was printed, Wittmack (Fl. Bras. fasc. lxxxi. p. 231) has referred this species to *M. picta*, Willd., but, as we think, on insufficient grounds. Willdenow's species was founded upon a barren or climbing branch; and Wittmack has seen flowerless specimens, collected by Martius in Brazil, having both climbing branches with leaves resembling those of Willdenow's plant, and flowering branches with leaves resembling those of Seemann's species, the leaves of the climbing branches of which are unknown. These three he identifies as one and the same species.

3. **Marcgravia parviflora,** Rich., ex Wittmack in Fl. Bras. fasc. lxxxi. p. 227.
Marcgravia pedunculosa, Tr. et Pl.

Panama (fide *Wittmack*) to—Peru and Brazil.

4. **Marcgravia polyantha,** Delp. in Atti Soc. Ital. Sci. di Milano, xii. pp. 182 et 210.

Var. β. **occidentalis,** Wittm. in Fl. Bras. fasc. lxxxi. p. 224.

South Mexico, Vera Cruz (*Galeotti*, 292).—And in Peru (fide *Wittmack*).

2. NORANTEA.

Norantea, Aubl. Pl. Guian. p. 554, t. 220; Benth. et Hook. Gen. Plant. i. p. 181.

Epiphytal or climbing shrubs. About ten or twelve species, distributed from South Brazil to Nicaragua. I have seen no specimens collected between Colombia and Nicaragua. One species occurs in the West Indies.

1. **Norantea anomala,** H. B. K. Nov. Gen. et Sp. vii. p. 218, t. 647.
Norantea sessiliflora, Planch. et Tr. Prodr. Fl. N. Gran. i. p. 245.

Nicaragua, Chontales (*Seemann*, 7; *Tate*, 255).—Southward to Ecuador and Brazil. Hb. Kew.

3. RUYSCHIA.

Ruyschia, Jacq. Stirp. Amer. p. 75, t. 51. fig. 2 (*Souroubea,* Aubl.); Benth. et Hook. Gen. Plant. i. p. 181.

Climbing or epiphytal shrubs, rarely arborescent. About eight species. Delpino (*l. c.*) retains the names above to designate distinct genera—*Ruyschia* being characterized by having solid transformed bracts which secrete nectar on the outside, whilst in *Souroubea* they are hollow, the secretion being formed inside. The Central-American and Mexican species hitherto collected belong to the latter genus or section. Considering it as one genus, the species are dispersed over Eastern Tropical South America, northward to Mexico and the West Indies.

1. **Ruyschia bicolor,** Benth. Bot. Voy. Sulph. p. 73, t. 29.

Souroubea auriculata, Delp. (in part.).
Souroubea guianensis, Aubl.

Panama, Chagres (*Fendler*, 291), Frijoli railway-station (*S. Hayes*); Nicaragua, Chontales (*Tate*, 22 & 284). Hb. Kew.

This species appears to be widely dispersed in South America.

2. **Ruyschia lepidota,** Miq. in Walp. Rep. ii. p. 811.

Souroubea auriculata, Delp. (in part.).

Panama, Isle of Coyba (*Seemann*). Hb. Kew.

3. **Ruyschia mexicana,** Baill. Adans. x. p. 241.

South Mexico, near Tlapacoya (*Hahn*, 421), Vera Cruz (*Galeotti*, 4215; *Linden*, 875), Mexico (*Harris*). Hb. Kew.

No. 3 comes under Delpino's *Souroubea exauriculata.*

Tribe TERNSTRŒMIEÆ.

Nearly the same range as the whole order.

4. TERNSTRŒMIA.

Ternstrœmia, Linn. fil. Suppl. p. 39; Benth. et Hook. Gen. Plant. i. p. 182.

Shrubs or trees. About twenty-five species, five or six of which are Asiatic, and the remainder Tropical-American.

1. **Ternstrœmia clusiæfolia,** H. B. K. Nov. Gen. et Sp. v. p. 463.

Panama, near the city of Panama (*Hinds*, *Fendler*).—Colombia. Hb. Kew.

2. **Ternstrœmia seemanni,** Tr. et Pl. Prodr. Fl. N. Gran. i. p. 257.

Ternstrœmia peduncularis, Seem. not of DC.

Panama, Rio Grande railway-station (*S. Hayes*), Chagres (*Fendler*, 317), without locality (*Seemann*). Hb. Kew.

3. **Ternstrœmia sylvatica,** Ch. et Schl. in Linnæa, v. p. 220; ?=*T. lineata*, DC. Monogr. Ternstr. p. 17, t. 1.

South Mexico, in woods between Jalapa and San Andres, also near San Miguel del Soldado (*Schiede & Deppe*), Chiconquiaco (*Schiede*), Mexico, without special localities (*Galeotti*, 7056; *Linden*, 45; *Ghiesbreght*, 27; *Coulter*, 750; *Botteri*, 946; *Bourgeau*, 3041; *Hahn & Harris*). Hb. Kew.

4. **Ternstrœmia tepezapote,** Ch. et Schl. in Linnæa, vi. p. 420; ?=*T. lineata*, DC. Monogr. Ternstr. p. 17, t. 1.

South Mexico, Mazatlan (*Hahn*), Tecoluto (*Schiede & Deppe*). Hb. Kew.

5. **Ternstrœmia,** sp.

NORTH MEXICO, Sierra Madre (*Seemann*, 2148); SOUTH MEXICO, Sierra San Pedro Nolasco (*Jurgensen*, 567). Hb. Kew.

5. CLEYERA.

Cleyera, DC. Prodr. i. p. 524; Benth. et Hook. Gen. Plant. i. p. 183.

Shrubs and trees. Six species—two Asiatic (Japan and India), the others Mexican and West-Indian.

1. **Cleyera integrifolia,** Pl. MSS. in Hb. Kew.

Freziera integrifolia, Benth. Pl. Hartw. 6.

NORTH MEXICO, Zacatecas and Bolaños (*Hartweg*). Hb. Kew.

2. **Cleyera mexicana,** Pl. MSS. in Hb. Kew.

Tristylium mexicanum, Turcz. in Bull. Soc. Nat. Mosc. 1858, p. 249.

SOUTH MEXICO, Sierra San Pedro Nolasco &c. (*Jurgensen*, 604). Hb. Kew.

6. FREZIERA.

Freziera, Swartz, Fl. Ind. occ. p. 971, t. 19; Benth. et Hook. Gen. Plant. i. p. 183.

About eight shrubby species, all restricted to Tropical America.

1. **Freziera sericea,** Humb. et Bonpl. Pl. Æquin. p. 29, t. 8.

Freziera chrysophylla, Humb. et Bonpl. loc. cit. t. 7.

Freziera hirsuta, Seem., non Smith.

PANAMA, Boquete, Veraguas (*Seemann*, 1153).—COLOMBIA. Hb. Kew.

2. **Freziera theoides,** Sw. Fl. Ind. occ. ii. p. 972.

SOUTH MEXICO, Cuesta Grande de Jalacingo (*Schiede & Deppe*), near Chiconquiaco (*Schiede*); PANAMA (*Seemann*).—WEST INDIES.

3. **Freziera,** sp.

PANAMA, Veraguas (*Seemann*). Hb. Kew.

Tribe SAURAUJEÆ.

7. SAURAUJA.

Saurauja, Willd. in Neue Schr. Ges. nat. Fr. Berl. iii. p. 406, t. 4; Benth. et Hook. Gen. Plant. i. p. 184.

About sixty-five species of trees and shrubs, natives of Tropical and Subtropical Asia and America.

1. **Saurauja angustifolia,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 242.
South Mexico, San Pedro Nolasco &c. (*Jurgensen*, 359, 898). Hb. Kew.

2. **Saurauja anisopoda,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 242.
South Mexico, Oaxaca (*Galeotti*).

3. **Saurauja aspera,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 242.
South Mexico, Oaxaca (*Galeotti*, 7235).

4. **Saurauja latipetala,** Hemsley, Diag. Pl. Nov. pars 1, p. 4.

Ramis dense strigilloso-rufo-furfuraceis, foliis petiolatis vix membranaceis oblongo-lanceolatis acutis obtusisve basi attenuatis utrinque hispidulo-paleaceis, pedunculis brevibus paucifloris, floribus ultra poll. diametro.

Arbor? novellis rufo-furfuraceis vel hispido strigillosis. *Folia* petiolata, submembranacea, oblongo-lanceolata, acuta vel obtusa, basi cuneata vel rotundata, utrinque plus minusve strigilloso-paleacea vel hispida, margine hispido, subtus costa et nervis lateralibus prominentibus, lamina 3–6 poll. longa, petiolo 6–9 lin. longo. *Flores* hermaphroditi, inter majores, in paniculas pedunculatas 6–12-floras dispositi, pedicellati, pedunculis 1–2-pollicaribus, pedicellis bracteis parvis ornatis; sepala inæqualia, ovati-rotundata, obtusa, extus furfuraceo-tomentosa, $2\frac{1}{2}$–$3\frac{1}{2}$ lin. longa; petala glabra, obovato-rotundata, fere libera, semipollicaria; stamina numerosa, filamentis brevibus basi barbatis, antheris magnis, loculis in parte superiore discretis; ovarium glabrum, 4–5-loculare; styli ad basin liberi, 3–4 lin. longis, stigmatibus capitatis.

South Mexico, Chiapas &c. (*Ghiesbreght*, 646). Hb. Kew.

A distinct species near *leucocarpa*, differing in its larger flowers, broad petals, short filaments, divergent anther-cells, and relatively long styles, as also in the foliage.

5. **Saurauja leucocarpa,** Schl. in Linnæa, x. p. 249.
Saurauja barbigera, Hook. Ic. Pl. t. 331.

South Mexico, Cuesta Grande de Chiconquiaco (*Schiede*), Orizaba (*Botteri*, 999), Jalapa (*Galeotti*, 3088; *Hahn*; *Linden*, 652). Hb. Kew.

6. **Saurauja macrophylla,** Linden, in Lindl. et Paxt. Fl. Gard. ii. p. 27, with a figure. ?=*S. villosa*, DC.

Mexico (*Jurgensen*); Guatemala (*Skinner*). Hb. Kew.

7. **Saurauja oreophila,** Hemsley, Diag. Pl. Nov. pars 1, p. 3.

Ramis junioribus pedunculis petiolisque furfuraceo-strigillosis, foliis longe petiolatis subcoriaceis lanceolatis utrinque acutis mucronulato-serrulatis totis sparse hispidulis, nervis lateralibus numerosis costaque subtus prominentibus, pedunculis paucifloris.

Arbor (?) ramis robustis, foliosis, junioribus furfuraceis strigillosisve. *Folia* in siccis læte virescentia, petiolata, subcoriacea, anguste lanceolata, acuta, utrinque sparse hispidula vel secus costam nervosque furfuracea, margine mucronulato-serrulata, nervis lateralibus contiguis, subtus prominentibus, lamina 3–5 poll. longa, petiolo furfuraceo, 1–$1\frac{1}{2}$ poll. longo. *Pedunculi* pauciflori, 1–2-pollicares, pedicellique furfuraceo-strigillosi. *Flores* polygami? ad 9 lin. diametro, sepalis inæqualibus, extus furfuraceis, ovati-ellipticis, 2–$2\frac{1}{2}$ lin. longis, petalis obovato-oblongis fere liberis ad 4 lin. longis; filamenta basi barbata; ovarium glabrum, stylis obsoletis.

GUATEMALA, Volcan de Fuego, at 10,500 feet (*Salvin*). Hb. Kew.

This is characterized by stout furfuraceous branches, narrow lanceolate pale green leaves on long petioles, and the numerous lateral veins prominent below.

8. **Saurauja pauciserrata,** Hemsley, Diag. Pl. Nov. pars 1, p. 3. (Tab. VII.)

Glabra, ramis rugosis, foliis ad apices ramorum confertis longe petiolatis membranaceis obovato-lanceolatis acuminatis basi valde attenuatis præcipue supra medium remote serratis, pedunculis paucifloris, floribus mediocribus.

Arbor formosa (*Salvin*), glabra, cortice (in siccis) valde rugoso, ramis ad apices tantum foliosis. *Folia* petiolata, membranacea, lanceolata, obovato-lanceolata, acuta vel acuminata, ad basin gradatim attenuata, præcipue supra medium remote mucronulato-serrulata, lamina usque 6 poll. longa, petiolo gracili 1–1½-pollicari. *Flores* (masculinos tantum vidi) albi, suaveolentes (*Salvin*), in paniculas angustas 9–12-floras longe pedunculatas dispositi, pedunculis infra nudis, 2–3-pollicaribus, ad basin ramulorum bracteatis bracteis foliaceis, pedicellis brevibus strigilloso-paleaceis; sepala ovato-oblonga vel fere rotundata, ciliata, ad 3 lin. longa; petala obovato-oblonga, 5–6 lin. longa, basi fere libera; stamina numerosa, filamentis basi strigilloso-barbatis; ovarium rudimentarium, globosum, stylis obsoletis.

GUATEMALA, Volcan de Fuego (*Salvin*). Hb. Kew.

This species is near *S. leucocarpa*, but differs in being glabrous, in the rugose bark, distant serratures, &c.

EXPLANATION OF TAB. VII.

Portion of plant, natural size. Fig. 1, a flower, enlarged; 2, the same, with the stamens and petals removed, to show the rudimentary ovary.

9. **Saurauja pedunculata,** Hook. Ic. Pl. t. 341, 342; ?=*S. serrata*, DC.

SOUTH MEXICO, Jalapa (*Coulter*, 95), Vera Cruz (*Gouin*, 75), Orizaba (*Botteri*, 908, 248), valley of Cordova (*Bourgeau*, 2241), Orizaba (*Bilimek*, 70). Hb. Kew.

10. **Saurauja scabrida,** Hemsley, Diag. Pl. Nov. pars 1, p. 3.

Fulvo- vel rufo-strigilloso-furfuracea, foliis amplis lanceolatis supra scabridis subtus velutinis, floribus parvis in paniculas amplas laxe ramosas dispositis.

Arbor (?) grandifolia, novellis strigilloso-furfuraceis. *Folia* petiolata, subcoriacea, lanceolata, elliptica vel obovato-lanceolata, 8–12 poll. longa, 3–5 poll. lata, acuta, basi cuneata vel rotundata, supra scabrida, subtus velutino-tomentosa, secus nervos strigilloso-furfuracea vel squamulata, margine mucronulato-denticulato, petiolo ad pollicari. *Flores* parvi, in paniculas axillares pedunculatas laxas dispositi, ramulis pedicellis calycibusque dense furfuraceo-squamulatis; sepala inæqualia, ovata vel rotundata, obtusa, circiter 2 lin. longa; petala obovata, 3–4 lin. longa; filamenta basi barbata; ovarium glabrum, 5-loculare, stylis petalis æquilongis. *Bacca* globosa, ad 4 lin. diametro, polysperma, seminibus insigniter scrobiculatis.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1747), Huatusco, region of Orizaba (*Bourgeau*, 3221). Hb. Kew.

The large scabrous leaves and loosely paniculate flowers distinguish this from all the other Mexican species. A specimen collected by Hahn at Misantla may belong to the same species. It appears to differ only in the more ferruginous, less copious indumentum, broader leaves rounded at the base, and more compact inflorescence.

11. **Saurauja serrata,** DC. Monogr. Ternstr. p. 28, t. 3.

South Mexico, near Jalapa, at the foot of Mt. Macaltepec (*Schiede & Deppe*).

12. **Saurauja veraguensis,** Seem. Bot. Voy. 'Herald,' Suppl. p. 249.

Saurauja montana, Seem. loc. cit. t. 16.

Panama, Boquete, Veraguas (*Seemann*).—Colombia. Hb. Kew.

This is probably the same as *S. pedunculata.*

13. **Saurauja villosa,** DC. Prodr. i. p. 525.

Saurauja obelanthera, Turcz. in Bull. Soc. Nat. Mosc. 1858, p. 245.

South Mexico, Orizaba (*Botteri,* 1126; *Jurgensen,* 896), Misantla (*Hahn*). Hb. Kew.

14. **Saurauja,** sp.

South Mexico, Minatitlan, Vera Cruz (*Andrieux,* 199). Hb. Kew.

15. **Saurauja,** sp.

South Mexico, Jalapa (*Coulter,* 95). Hb. Kew.

16. **Saurauja,** sp.

South Mexico (*Jurgensen,* 730). Hb. Kew.

17. **Saurauja,** sp.

Guatemala, Barranca de Sunila (*Skinner*). Hb. Kew.

This is probably a new species; but it is too near *S. pedunculata* to describe without very complete material.

18. **Saurauja,** sp.

Guatemala, without habitat (*Bernoulli,* 266 or 285). Hb. Kew.

Tribe GORDONIEÆ.

Chiefly American and Asiatic. One African genus and one native of New Caledonia.

8. PELLICIERA.

Pelliciera, Planch. et Tr. in Benth. et Hook. Gen. Plant. i. p. 186, et Ann. Sc. Nat. sér. 4, vol. xvii. p. 380 (ubi *Pelliceria* scripta).

Flores hermaphroditi, bracteolis 2 longis involutis diu inclusi; sepala 5, coriacea, obliqua, oblonga, decidua, bracteolis petalisque multo breviora, valde imbricata; petala 5, hypogyna, libera, linearia, elongata, obtusa, imbricata; stamina 5, petalis alterna, filamentis linearibus dorso sulcatis, basi ima liberis, mox intra sulcos pistilli arcte adpressis, non tamen vere ovario adnexis,

antheris linearibus, basi sagittatis, filamentis æquilongis, connectivo angusto in mucronem longiusculum producto; loculis 2, lateraliter dehiscentibus, septo lato quasi bilocellatis; ovarium conico-cylindraceum in stylum subulatum sensim productum, 10-sulcatum, imperfecte 2-loculare (ex Planch. et Triana, 5-loculare), loculis 1-ovulatis, ovulis pendulis sessilibus vel unico funiculato, altero mox abortivo; stylo demum coriaceo persistente; stigmate terminali, punctiformi. *Fructus* coriaceus, indehiscens, inverse clavatus, 10-sulcatus, 1-locularis, 1-spermus; semen pendulum, exalbuminosum, testa fere evanida, cotyledonibus latis crasso-carnosis, radicula recta supera brevi, plumula longe evoluta. *Arbor* glabra, habitu *Rhizophoris* similis.

1. **Pelliciera rhizophoræ**, Pl. et Tr. *locc. citt.* (Tab. VIII.)

Arbor glabra, 18–30-pedalis, cortice lævi, ramis pendulis (*S. Hayes*). *Folia* alterna, exstipulata, sessilia, coriacea, obliqua, inæquilatera, oblongo-lanceolata, 3–6 poll. longa, obtusa, basi cuneata vel in ramis floriferis lata et semiamplexicaulia, integerrima vel juniora secus marginem sinistrum (ad plantam spectantem) denticulis articulatis munita, venis immersis et fere obsoletis. *Flores* axillares vel terminales, sessiles, solitarii, ad bipollicares (primum albi, demum rosei, *S. Hayes*). *Fructus* $2\frac{1}{2}$–3 poll. longus, ad $1\frac{1}{2}$ poll. diametro.

Panama, Rio Grande swamps, with mangroves (*S. Hayes*, 76).—Also at the mouth of watercourses in the Bay of Buenaventura, province of Choco, Colombia. Hb. Kew.

EXPLANATION OF TAB. VIII.

Fig. 1, flower and bracts; 2, flower, with bracts removed; 3, stamens and pistil; 4, anther; 5, sepal; 6, petal; 7, pistil and remains of filaments; 8, vertical section of ovary; 9, transverse section of ovary; 10, ovule; 11, ripe fruit; 12, vertical section of the same, showing the plumule of the solitary seed; 13, vertical section of the same through the cotyledons; 14, cross section of the exalbuminous seed, the testa of which has been absorbed during maturation.

There seems little doubt that the plant at first imperfectly described by Planchon and Triana is the same as the Panama plant, of which there is abundant material at Kew, collected by Hayes. The only points of difference are the apparently 5-celled ovary and white flowers of the Colombian specimens.

Altogether this is one of the most singular plants that has come under our observation; and therefore we have given the generic character. The fact that the testa of the seed is almost wholly absorbed during maturation, leaving the embryo lying naked in the fruit, is of itself exceedingly interesting. The plumule, as described above, is largely developed in the dormant seed; and, according to a note in Hb. Kew, by Hayes, it grows in germination to a considerable length before the radicle begins to elongate.

9. GORDONIA.

Gordonia, Ellis in Phil. Trans. lx. p. 518, t. 11 (1770); Benth. et Hook. Gen. Pl. i. p. 186.

About ten arboreous species, of which two are North-American, and the remainder natives of Tropical Asia.

1. **Gordonia lasianthus,** Linn., var.? Hook. et Arn. Bot. Beech. Voy. p. 280.
SOUTH MEXICO, Tepic (*Lay*). Hb. Kew.
The typical plant is a native of the South-eastern States of North America.

Tribe BONNETIEÆ.

With the exception of one species of *Archytæa*, in the Indian Archipelago, this tribe is restricted to America.

10. MARILA.

Marila, Swartz, Prodr. p. 84 (*Scyphæa*, Presl, Symb. i. p. 7, t. 4); Benth. et Hook. Gen. Plant. i. p. 189.

Four arborescent species, restricted to South America.

1. **Marila macrophylla,** Benth. Bot. Voy. Sulph. p. 72.
PANAMA, Chagres (*Fendler*, 93). Hb. Kew.

[*Hypopogon brevipes*, Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 246; Benth. et Hook. Gen. Plant. i. p. 180, MEXICO, is doubtfully referred to *Symplocos* by Bentham and Hooker; and it appears to be the same as our *Gordonia parviflora*, Diag. Pl. Nov. &c. pars 1, p. 4.]

[KOWALEWSKIA, Turcz. in Bull. Soc. Mosc. Nat. 1859, p. 263, is *Clethra tinifolia*, Sw., in *Ericaceæ*.]

Order XXIV. MALVACEÆ.

Malvaceæ, Benth. et Hook. Gen. Plant. i. p. 195.

Herbs, shrubs, or soft-wooded trees. There are about sixty genera, comprising 700 species, distributed over all the regions of the earth except the arctic; but most numerous in tropical and subtropical countries.

Tribe MALVEÆ.

[*Malva borealis*, Wallm., and *M. parviflora*, Linn., widely dispersed weeds of cultivation, are now naturalized in some parts of Mexico.]

1. CALLIRHOE.

Callirhoe, Nutt. in Journ. Acad. Philad. ii. p. 181; Benth. et Hook. Gen. Pl. i. p. 201.

About six herbaceous species, natives of North America.

1. **Callirhoe involucrata,** A. Gray, Gen. Ill. ii. t. 217.
PLATTE and COLORADO RIVERS to TEXAS—and NORTH MEXICO (*Gregg*, 83). Hb. Kew.

2. SIDALCEA.

Sidalcea, A. Gray, Pl. Fendl. p. 18; Benth. et Hook. Gen. Plant. i. p. 201.

Eight herbaceous species, confined to the western side of North America.

1. **Sidalcea malvæflora,** A. Gray, Pl. Wright. i. p. 16; Bot. Reg. 1036.

Sidalcea oregana, A. Gray.

Callirrhoe spicata, Regel, Gartenflora, t. 737.

Missouri and Oregon to Texas—and North Mexico, Las Playas, Sonora (*Thurber*); El Potrero (*Schott*). Hb. Kew.

2. **Sidalcea neo-mexicana,** A. Gray, Pl. Wright. i. p. 23.

Texas; New Mexico.—North Mexico, San Juan de la Vequeria, Tamaulipas (*Gregg*).

3. MALVASTRUM.

Malvastrum, A. Gray, Pl. Fendl. p. 21; Benth. et Hook. Gen. Plant. i. p. 201.

Herbaceous or half-shrubby; about sixty species, fifteen of which are South-African, the rest American, and two are now dispersed over nearly all tropical countries.

1. **Malvastrum (Malva) angustifolium** (Cav.), Diss. ii. p. 64, t. 2 *a.* f. 1.

?=*Sida.*

Mexico.

2. **Malvastrum coccineum,** A. Gray, Pl. Fendl. p. 24.

Utah; Arizona; New Mexico; Texas.—North Mexico, Chihuahua (*Torrey*); South Mexico, Santa Fé (*Edwards*). Hb. Kew.

3. **Malvastrum (Malva) geranioides,** Ch. et Schl. in Linnæa, v. p. 226.

South Mexico, Llanos de Perote (*Schiede & Deppe*).

4. **Malvastrum leptophyllum,** A. Gray, Pl. Wright. i. p. 17.

North Mexico, Ojo de Vaca &c., Chihuahua (*Thurber*).

5. **Malvastrum (Malva) macrostachyum,** Presl, Reliq. Hænk. ii. p. 120.

South Mexico, Acapulco (*Hænke*).

6. **Malvastrum mexicanum,** Schauer in Linnæa, xx. p. 724.

South Mexico, around Zimapan (*Aschenborn,* 613).

7. **Malvastrum peruvianum,** A. Gray, in Bot. Amer. Explor. Exped. i. p. 146.

Malva peruviana, Linn. Sp. Pl. p. 968; Jacq. Hort. Vindob. t. 156.

South Mexico, Province of Mexico (*Hahn,* 1172; *Bourgeau,* 763).—Colombia and Peru. Hb. Kew.

8. **Malvastrum pedatifidum,** A. Gray, Pl. Wright. i. p. 17.

Texas; New Mexico.—North Mexico, valley of the Salado, Chihuahua (*Wright*). Hb. Kew.

9. **Malvastrum (Malva) roseum** (DC.), Prodr. i. p. 435; Calques des Dess. Fl. Mex. 58.

Mexico (*Ruhland*).

10. **Malvastrum ribifolium,** Hemsl.

Malva ribifolia, Schl. in Linnæa, xi. p. 351.

South Mexico, without localities (*Bates*; *Andrieux*, 516; *Bourgeau*, 927; *Berlandier*, 1257); Mineral del Monte (*Ehrenberg*). Hb. Kew.

11. **Malvastrum spicatum,** A. Gray, in Bot. Amer. Explor. Exped. i. p. 147.

Malva spicata, Linn.

Var. *α. ovata,* Cav. Diss. ii. t. 20. fig. 2.

Var. *β. spicata,* Cav. Diss. ii. t. 20. fig. 4.

Texas; West Indies.—Mexico (*Bourgeau*, 1170; *Gouin*); Guatemala (*Friedrichsthal*); Panama (*Seemann*).—In South America to Paraguay. Also in Australia, Timor, and Cape-Verd Islands. Hb. Kew.

12. **Malvastrum subtriflorum,** Hemsl.

Malva subtriflora, Lag. Nov. Gen. et Sp. p. 21.

South Mexico, Cordillera of Oaxaca, 6500 feet (*Galeotti*, 4087).

13. **Malvastrum thurberi,** A. Gray, Pl. Thurb. p. 307.

New Mexico; California.—North Mexico, Santa-Cruz valley, Sonora (*Thurber*, 709), San Luis Potosi to San Antonio (*Parry*, 82). Hb. Kew.

14. **Malvastrum tricuspidatum,** A. Gray, Pl. Wright. i. p. 16.

Malva tricuspidata, Ait.

Malvastrum carpinifolium, A. Gray.

California; Texas; Florida.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 91), Sonora Alta (*Coulter*, 799); South Mexico, Orizaba (*Botteri*, 752; *Bourgeau*, 2728).—West Indies, and southward to Peru and Brazil; naturalized in the Canary Islands and India. Hb. Kew.

15. **Malvastrum vitifolium,** Hemsl.

Malva vitifolia, Cav. Ic. i. t. 30.

Malva lactea, Ait.

South Mexico, Orizaba (*Botteri*, 768), Vera Cruz to Orizaba (*Müller*, 451), Zimapan (*Aschenborn*, 613), Huasca (*Ehrenberg*), province of Mexico (*Bourgeau*, 490; *Coulter*, 839), valley of Cordova (*Bourgeau*, 469, 2186), Queretaro (*Platz*). Hb. Kew.

(Probably several of the foregoing names do not belong to distinct species.)

16. **Malvastrum,** sp.

Mexico (*Jurgensen*, 497). Hb. Kew.

17. **Malvastrum,** sp.

South Mexico, Guadalupe, valley of Mexico (*Bourgeau*, 764). Hb. Kew.

18. **Malvastrum,** sp.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 90). Hb. Kew.

19. **Malvastrum,** sp.

North Mexico, Sonora Alta (*Coulter*, 842). Hb. Kew.

20. **Malvastrum,** sp.

South Mexico, Cañada de Queretaro (*Platz*). Hb. Kew.

4. ANODA.

Anoda, Cav. Diss. p. 38, t. 10. fig. 3; Benth. et Hook. Gen. Plant. i. p. 202.

Herbs. About eight species according to Bentham and Hooker. Some of the following names probably designate plants belonging to other genera, or are synonymous with other species of this genus.

1. **Anoda acerifolia,** DC. Prodr. i. p. 459.

Sida hastata, Bot. Mag. 1541?

Mexico (*Aschenborn*, 275).

2. **Anoda cristata,** Schl. in Linnæa, xi. p. 210.

Sida cristata, Linn., excl. var. β, Bot. Mag. t. 330.
Anoda dilleniana, Cav.
Anoda triloba, Cav.

South Mexico, Zimapan (*Coulter*, 850), Orizaba (*Botteri*, 749), Mexico (*Tate*, *Bourgeau*, 292, 926); Guatemala, Volcan de Fuego (*Salvin*). Hb. Kew.

3. **Anoda crenatiflora,** Ort. Dec. 8, p. 96.

Anoda parviflora, Cav. Ic. v. p. 19, t. 431.
Sida crenatiflora, Willd.

South Mexico, Zimapan (*Coulter*, 846), valley of Mexico (*Bourgeau*, 765), valley of Queretaro (*Ortega*), Vera Cruz (*Linden*, 832), Zimapan (*Coulter*, 846). Hb. Kew.

4. **Anoda hastata,** Cav. Diss. i. p. 38, t. ii. f. 2; Gray, Gen. Ill. ii. t. 124.

Sida cristata, var. β.

Widely dispersed in Tropical and Subtropical America, including Mexico and Central America (*Bernoulli*, 197; *Botteri*, 751, 754, 755; *Bourgeau*, 559, 560, 1570; *Coulter*, 845, 847, 848; *Galeotti*, 4066; *Linden*, 836; *Parry & Palmer*, 76, 77, and 78). —Also naturalized in some parts of the Old World. Hb. Kew.

5. **Anoda incarnata,** H. B. K. Nov. Gen. et Sp. v. p. 266.

Mexico, cultivated in gardens (*Humboldt & Bonpland*).

6. **Anoda lanceolata,** Hook. et Arn. Bot. Beech. Voy. p. 411.

South Mexico, Tepic to San Blas (*Lay*). Hb. Kew.

7. **Anoda pentaschista,** A. Gray, Pl. Wright. ii. p. 22.

NEW MEXICO.—NORTH MEXICO, Sonora (*Thurber*), Presidio del Norte and further down the Rio Grande (*Torrey*). Hb. Kew.

8. **Anoda pubescens,** Schl. in Linnæa, xi. p. 218.

MEXICO, Mineral del Monte (*Ehrenberg*).

9. **Anoda triangularis,** DC. Prodr. i. p. 459.

Sida triangularis, Willd.

Anoda brachyantha, Reichb. Hort. Bot. t. 34.

SOUTH MEXICO, Volcan de Jorullo (*Humboldt & Bonpland*).

5. GAYA.

Gaya, H. B. K. Nov. Gen. et Sp. v. p. 266, t. 475, 476; Benth. et Hook. Gen. Plant. i. p. 203.

Herbs or undershrubs. Five or six species restricted to Tropical America.

1. **Gaya disticha,** Presl, Reliq. Hænk. ii. p. 113.

Sida disticha, Cav. Ic. v. p. 12, t. 432.

SOUTH MEXICO, Acapulco (*Hænke*).

2. **Gaya hermannioides,** H. B. K. Nov. Gen. et Sp. v. p. 268, t. 475.

Sida gaya, DC.

SOUTH MEXICO, on the western declivity of the mountains near Sopilote (*Humboldt & Bonpland*).

3. **Gaya subtriloba,** H. B. K. Nov. Gen. et Sp. v. p. 270, t. 476.

Sida occidentalis, Linn. Sp. Pl. p. 964; Dill. Hort. Elth. i. t. 6.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 92); SOUTH MEXICO, Aguas buenas, Guanaxuato (*Hartweg*).—And in TROPICAL S. AMERICA. Hb. Kew.

6. SIDA.

Sida, Linn. Gen. Plant. n. 837; Benth. et Hook. Gen. Plant. i. p. 203.

About eighty shrubby and herbaceous species, natives of warm and hot regions in Asia, Africa, Australia, and America, but most numerous in the New World. A revision would doubtless reduce the following list by at least half.

1. **Sida acuta,** Burm., DC. Prodr. i. p. 460.

Sida stipulata, Cav.

PANAMA (*Sinclair*, *Duchassaing*).—COLOMBIA. Hb. Kew.

Probably the same as *S. carpinifolia.*

2. **Sida aggregata,** Presl, Reliq. Hænk. ii. p. 106.

MEXICO.

3. **Sida angustifolia,** Presl, Reliq. Hænk. ii. p. 109.

MEXICO (*Hænke*).

4. **Sida anomala,** St.-Hil. Fl. Bras. Mer. i. p. 177, t. 33.

Var. **mexicana,** Moric. Pl. Am. Rar. i. p. 11, t. 9.
SOUTH MEXICO, near Tampico (*Berlandier*).

5. **Sida arguta,** Presl, Reliq. Hænk. ii. p. 106.
SOUTH MEXICO, Acapulco (*Hænke*).

6. **Sida bicolor,** Cav. Ic. iv. p. 6, t. 311.
"NEW SPAIN."
Described from a garden specimen.

7. **Sida brachystemon,** DC. Prodr. i. p. 469; Calques des Dess. Fl. Mex. 72.
MEXICO (*Sessé*).

8. **Sida carnea,** DC. Prodr. i. p. 173; Calques des Dess. Fl. Mex. 71.
MEXICO.

9. **Sida carpinifolia,** Linn. Pl. Suppl. p. 307.
Sida spirææfolia, Willd.
Sida planicaulis, Cav. Diss. i. p. 24, t. 3.
Sida stipulata, Cav. *loc. cit.* t. 3. fig. 10.
Sida acuta, Cav.
Sida brachypetala, DC.
MEXICO (*Hænke, Berlandier*), GUATEMALA (*Salvin*), NICARAGUA (*Lévy, Tate*), PANAMA (*Fendler, Sinclair*).—This has a wide range of distribution in TROPICAL and SUBTROPICAL AMERICA. It also occurs in AFRICA and INDIA, and other parts of the OLD WORLD. Hb. Kew.

10. **Sida collina,** Schl. in Linnæa, xi. p. 364.
SOUTH MEXICO, Hacienda de la Laguna (*Schiede*).

11. **Sida costata,** Schl. in Linnæa, xi. p. 364.
SOUTH MEXICO, Hacienda de la Laguna (*Schiede*).

12. **Sida cordifolia,** Linn. Sp. Pl. p. 961; Cav. Diss. i. t. 3. fig. 2; Dill. Hort. Elth. t. 171.
Sida althæifolia, Sw.
Sida multiflora, Cav.
Sida micans, Cav.
Sida rotundifolia, Cav.
Sida herbacea, Cav.
Widely dispersed in TROPICAL AMERICA, and extending to NORTH MEXICO (*Gregg*).—Also common in AFRICA and MAURITIUS. Hb. Kew.

13. **Sida diffusa,** H. B. K. Nov. Gen. et Sp. v. p. 257.
SOUTH MEXICO, near Zelaya, 5700 feet (*Humboldt*).

14. **Sida dombeyana,** DC. Prodr. i. p. 463.

Panama (*Seemann*, *Sinclair*, *Duchassaing*).—Tropical S. America. Hb. Kew.

Grisebach (Fl. Brit. W. Ind. p. 75) refers this to *S. supina*, l'Hér.

15. **Sida elliottii,** Torr. & Gray, Fl. N. Am. i. p. 231.

South Carolina, Florida, and Georgia,—South Mexico, near Tantoyuca (*Ervendberg*).

16. **Sida endlicheriana,** Presl, Reliq. Hænk. ii. p. 111.

Mexico.

17. **Sida filiformis,** Moric. Pl. Am. Rar. i. p. 10, t. 8.

Sida filicaulis, Torr. & Gray.

Texas, New Mexico, to—North Mexico, Monterey, Nuevo Leon (*Eaton & Edwards*), Chihuahua (*Potts*), Tampico de Tamaulipas (*Berlandier*), Zacatecas (*Coulter*, 835), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 87 and 89); South Mexico, valley of Mexico (*Bourgeau*, 291). Hb. Kew.

This may be the same as *S. diffusa*, H. B. K.

18. **Sida garckeana,** Polakowsky, in Linnæa, xli. p. 551.

Costa Rica, Rio Reventazon (*Polakowsky*).

19. **Sida glanduligera,** Benth. Bot. Voy. Sulph. p. 69.

Nicaragua, Realejo (*Sinclair*). Hb. Kew.

20. **Sida glomerata,** Cav. Diss. i. p. 18, t. 2. fig. 6.

South Mexico, region of Orizaba (*Bourgeau*, 2863); Panama, Empire railway-station (*S. Hayes*, 287).—Also in Jamaica and Trinidad, and widely spread in Tropical South America. Hb. Kew.

21. **Sida hænkeana,** Presl, Reliq. Hænk. ii. p. 104.

Mexico.

22. **Sida hederacea,** Torr. et Gray, Pl. Fendl. p. 23 in adnot.

Texas, New Mexico, and California to—South Mexico, Oaxaca (*Ghiesbreght*), on the borders of fields near the city of Mexico (*Bourgeau*, 32). Hb. Kew.

Var. ? **parvifolia.**

New Mexico,—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 75); South Mexico, valley of Mexico (*Schaffner*, 74). Hb. Kew.

23. **Sida hibisciformis,** Bert. Fl. Guat. p. 28.

Guatemala, Volcan de Agua (*Velasquez*).

24. **Sida hilariana,** Presl, Reliq. Hænk. ii. p. 107.

South Mexico. (*Hænke*), Los Baños, 1000 feet (*Heller*).

25. **Sida humilis,** Willd. Sp. Pl. iii. p. 744; Cav. Diss. v. t. 134. fig. 2.

Sida begonioides, Griseb.
Sida hederæfolia, Cav.?

PANAMA (*Seemann, Duchassaing*).—TROPICAL SOUTH AMERICA. Also in Tropical ASIA and AFRICA.

26. **Sida hyssopifolia,** Presl, Reliq. Hænk. ii. p. 109.

MEXICO.

27. **Sida jamaicensis,** Cav. Diss. i. p. 17, t. 2. fig. 5.

PANAMA (*Duchassaing*).—JAMAICA; ST. THOMAS.

28. **Sida kunthiana,** Presl, Reliq. Hænk. ii. p. 106.

SOUTH MEXICO, Acapulco (*Hænke*).

29. **Sida lepidota,** A. Gray, Pl. Wright. ii. p. 18.

TEXAS.—NORTH MEXICO, Cocospera, Sonora, and east of Sierra Madre (*Schott*). Hb. Kew.

30. **Sida lindeniana,** Turcz. (char. emend. et amplif.); Hemsley, Diag. Pl. Nov. pars alt. p. 24. (Tab. IX.)

Fruticosa, furfuraceo-puberula, foliis amplis longissime petiolatis subtus pallidis profunde palmatim 5-lobatis (vel supremis interdum trilobatis) lobis integris vel plus minusve dentatis, floribus albis cymoso-paniculatis, paniculis amplis multifloris ramulis pedicellisque gracilibus, pedicellis paulum infra flores articulatis, calycis lobis ovato-oblongis obtusiusculis, petalis latis breviter unguiculatis, carpellis numerosis inflatis membranaceis erostratis.

Frutex furfuraceo-puberulus. *Folia* petiolata, membranacea, supra asperula, subtus pallida, profunde palmatim 5-lobata (vel superiora interdum 3-lobata), 4–6 poll. diametro, lobis integris vel plus minusve lobulatis, petiolo 4–6 poll. longo. *Flores* albi, vix 1 poll. diametro, cymoso-paniculati; paniculis amplis, multifloris, terminalibus axillaribusve, ramulis pedicellisque gracilibus, pedicellis paulum infra flores articulatis; calyx circiter 3 lin. longus, lobis ovato-oblongis, obtusiusculis; petala lata, breviter unguiculata; ovarium multiloculare, loculis uniovulatis, stigmatibus capitatis. *Carpella* matura inflata, membranacea, mutica, 4–5 lin. longa.—*Sida lindeniana* et *ghiesbreghtiana,* Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 200, et *Abutilon? ambiguum,* Turcz. *loc. cit.* p. 202.

SOUTH MEXICO, Mirador, Vera Cruz (*Linden,* 841), Cordillera of Vera Cruz (*Galeotti,* 4107), valley of Cordova (*Bourgeau,* 1501). Hb. Kew.

31. **Sida linifolia,** Juss. Cav. Diss. i. p. 14, t. 2. fig. 1.

SOUTH MEXICO, Volcan de Jorullo (*Humboldt & Bonpland*); COSTA RICA (*Endres,* 204); PANAMA (*Seemann, S. Hayes*).—TRINIDAD, HAITI, and common in Tropical SOUTH AMERICA. Also in Tropical AFRICA and FIJI ISLANDS. Hb. Kew.

32. **Sida longipes,** A. Gray, Pl. Wright. i. p. 19.

NEW MEXICO.—SOUTH MEXICO, Zimapan (*Coulter,* 830). Hb. Kew.

33. **Sida muricata,** Cav. Ic. vi. p. 78, t. 597. fig. 2.

NEW SPAIN, Chalma (*Née*).

34. **Sida oxyphylla,** DC. Prodr. i. p. 465; Calques des Dess. Fl. Mex. 65.
Mexico (*Sessé*), near the city of Mexico (*Hegewisch*).

35. **Sida paniculata,** Linn. Sp. Pl. p. 962.
Sida atrosanguinea, Jacq. Ic. Rar. i. t. 136.
Sida floribunda, H. B. K.
Sida capillaris, Cav.
South Mexico, valley of Cordova (*Bourgeau*), Misantla (*Schiede*); Panama, Empire railway-station (*S. Hayes*, 287).—Tropical South America and West Indies. Hb. Kew.

36. **Sida physocalyx,** A. Gray, Pl. Lindl. ii. p. 163.
Texas.—North Mexico, Fronteras, Sonora, and near the city of Parras, Cohahuila (*Thurber*, *Gregg*). Hb. Kew.

37. **Sida pilosa,** Cav. Diss. p. 9, t. 1. fig. 8.
Mexico (*Hœnke*).
Referred by Grisebach to *S. supina*, l'Hér., and probably the same as *S. diffusa*, H. B. K.

38. **Sida quinquenervia,** Duchass. in Pl. et Tr. Prodr. Fl. N. Gran. i. p. 176.
Panama (*Duchassaing*). Hb. Paris.

39. **Sida rhombifolia,** Linn. Sp. Pl. p. 961.
Sida hondensis, H. B. K.
Common in the West Indies, and in America from Carolina to Buenos Ayres, and including the following collectors' numbers in Mexico and Central America:—*Botteri*, 756, 757, 758, 759, 761, and 762; *Bourgeau*, 34, 562, 1571, 1721, 2645, and 2907; *Fendler*, 16 and 18; *Galeotti*, 4076; *Müller*, 14; *S. Hayes*, 286; *Parry & Palmer*, 86; *Tate*, 65.—And widely diffused in the tropical and subtropical regions of the Old World. Hb. Kew.

Var.? **microphylla.**
Fendler, 13; *Parry & Palmer*, 88; *Seemann*, 91. Hb. Kew.

40. **Sida salviæfolia,** Presl, Reliq. Hænk. ii. p. 111.
Mexico.

41. **Sida sessei,** Lag. Nov. Gen. et Sp. p. 21.
New Spain.

42. **Sida setifera,** Presl, Reliq. Hænk. ii. p. 105.
South Mexico, western side (*Hœnke*).

43. **Sida spinosa,** Linn. Sp. Pl. p. 690.
Sida betonicæfolia, Pav.
Sida alba, Linn.
Sida milleri, DC.
Sida angustifolia, Lamk.
Sida linearis, Cav.

A common plant in AMERICA, from PENNSYLVANIA to MONTE VIDEO, and in the WEST INDIES.—SOUTH MEXICO, Hacienda de la Laguna (*Schiede*); PANAMA, Chagres (*Fendler*, 14).—And generally dispersed in the TROPICS. Hb. Kew.

44. **Sida ulmifolia,** Cav. Diss. t. 4. fig. 4.

Sida arguta, Sw.
S. emarginata, Willd.

SOUTH MEXICO, Vera Cruz (*Galeotti*, 4068; *Linden*, 838); Orizaba (*Botteri*, 764). —A common species in Tropical SOUTH AMERICA; also in JAMAICA, HAITI, &c. Hb. Kew.

45. **Sida urens,** Linn. Sp. Pl. p. 193; Cav. Diss. t. 2. f. 12.

Sida verticillata, Cav.

SOUTH MEXICO (*Bourgeau*, *Beechey*, *&c.*); GUATEMALA (*Friedrichsthal*); PANAMA, Chagres (*Fendler*, 18).—A common species in the WEST INDIES and Tropical SOUTH AMERICA; also in Tropical AFRICA, MADAGASCAR, &c. Hb. Kew.

46. **Sida venusta,** Schl. in Linnæa, xi. p. 365.

SOUTH MEXICO, at Tlalpujahua (*Keerl*).

47. **Sida vesicaria,** Cav. Diss. ii. p. 55, t. 14. fig. 3.

MEXICO.

Grisebach (Fl. Brit. W. Ind. p. 79) includes this under his *Abutilon leiospermum.*

48. **Sida,** sp. (*S. dumosa*, Seem. nec Swartz.)

NORTH MEXICO, Sierra Madre (*Seemann*). Hb. Kew.

7. BASTARDIA.

Bastardia, H. B. K. Nov. Gen. et Sp. v. p. 254, t. 472; Benth. et Hook. Gen. Plant. i. p. 203.

Herbs or shrubs, two or three species restricted to Tropical America.

1. **Bastardia hirsutiflora,** Presl, Reliq. Hænk. ii. p. 112.

SOUTH MEXICO, Acapulco (*Hænke*).

2. **Bastardia viscosa,** H. B. K. Nov. Gen. et Sp. v. p. 256.

Sida fœtida, Cav.
Sida retrofracta, DC.

SOUTH MEXICO, Acapulco (*Sinclair*).—Also widely diffused in SOUTH AMERICA and WEST INDIES. Hb. Kew.

8. WISSADULA.

Wissadula, Medik. ex Presl, Rel. Hænk. ii. p. 117, t. 69; Benth. et Hook. Gen. Plant. i. p. 204.

Four or five shrubby species, natives of Tropical America, one of them also having a wide range in the Old World.

1. **Wissadula excelsior,** Presl, Reliq. Hænk. ii. p. 118, t. 69. figg. *a–m.*

Sida excelsior, Cav.

South Mexico, Mirador, Vera Cruz (*Linden*, 1377), Acapulco (*Hænke*); Nicaragua, Chontales (*Tate*); Panama, Chagres (*Fendler*, 22; *Seemann*, 474; *S. Hayes*).—Widely dispersed in Tropical South America. Hb. Kew.

Grisebach cites this name as a synonym of *Abutilon periplocifolium*, G. Don, which also includes *W. rostrata.*

2. **Wissadula mucronulata,** A. Gray, Reliq. Berland. Bot. Mex. Bound. p. 39.

South Mexico, near Tantoyuca (*Ervendberg*, 152; *Berlandier*, 3109). Hb. Kew.

3. **Wissadula nudiflora,** Benth. Bot. Voy. Sulph. p. 69.

Abutilon nudiflorum, Sweet.

Sida nudiflora, l'Hérit.

Nicaragua, Gulf of Fonseca (*Sinclair*).—West Indies; Colombia. Hb. Kew.

4. **Wissadula rostrata,** Planch. in Hook. Niger Flora, p. 229.

Sida periplocifolia, L.

Abutilon periplocifolium, G. Don.

Panama, without locality (*Duchassiang*); Guatemala (*Friedrichsthal*).—Widely dispersed in Tropical South America. It is also common in Tropical Africa and Java, and naturalized in Ceylon. Hb. Kew.

5. **Wissadula spicata,** Presl, Reliq. Hænk. ii. p. 117.

Abutilon spicatum, H. B. K.

Wissadula gymnostachya et *W. jamesonii,* Turcz.

Mexico.—Colombia.

6. **Wissadula scabra,** Presl, Reliq. Hænk. ii. p. 117, t. 69. figg. 1–14.

Mexico.

(Two or three of the species enumerated are of doubtful affinity.)

9. ABUTILON.

Abutilon, Gærtn. Fruct. ii. p. 251, t. 135; Benth. et Hook. Gen. Plant. i. p. 204.

Herbs or shrubs, rarely arboreous, about seventy species, generally distributed in warm regions.

1. **Abutilon albidum,** Hook. et Arn. Bot. Beech. Voy. p. 278.

Sida albida, Willd.

South Mexico, Tepic (*Lay*), Octopan (*Schiede*). Hb. Kew.

2. **Abutilon amplexifolium,** Hemsley, Diag. Pl. Nov. pars alt. p. 23.

Pilosum, ramis teretibus elongatis, foliis cordato-ovatis grosse crenato-dentatis longe acuminatis, inferioribus longiuscule petiolatis, superioribus breviter petiolatis vel sessilibus et amplexi-

caulibus, floribus mediocribus pedunculatis solitariis vel 2–3 in axillis foliorum supremorum, calycis lobis ovatis longe acuminatis, carpellis circiter 12 inflatis breviter rostratis 2–5-spermis.

Frutex longiuscule pilosus, pilis patentibus. *Rami* teretes, recti, elongati, foliosi. *Folia* alte cordato-ovata (sinu clauso), cum petiolo 3–6-pollicaria, grosse crenato-dentata, longe acuminata, obtusiuscula, inferiora longiuscule (1–2 poll.) petiolata, superiora breviter petiolata vel sessilia et amplexicaulia. *Flores* pedunculati, vix pollicem diametro, axillares, solitarii, gemini vel terni; pedunculis inferiorum 3-pollicaribus, sursum gradatim brevioribus; calycis lobi ovati, longe acuminati, petalis fere æquilongi; petala late obcordata (sinu apertissimo), margine basin versus ciliato. *Carpella* circiter 12, inflata, breviter rostrata, 2–5-sperma; semina matura compresso-pyriformia, lævia, glabra.—*Sida amplexifolia*, DC. Prod. i. p. 469, Calques des Dess. Fl. Mex. 73.

South Mexico, valley of Cordova (*Bourgeau*, 1512), Orizaba (*Botteri*, 770), Vera Cruz to Orizaba (*Müller*, 1666). Hb. Kew.

3. **Abutilon andrieuxii**, Hemsley, Diag. Pl. Nov. pars alt. p. 24.

Herbaceum, caulibus erectis ramosis crassiusculis glabrescentibus, foliis amplis longe petiolatis albido-velutinis cordato-rotundatis interdum plus minusve distincte trilobatis denticulatis, floribus parvis flavis laxe cymoso-paniculatis, calycis lobis late ovatis obtusiusculis, petalis obovato-rotundatis, ovario 8–9-loculari, stigmatibus capitatis, carpellis maturis sæpissime 3-spermis quam calyx triplo longioribus apice brevissime cornutis.

Herba erecta, ramosa, caulibus crassiusculis glabrescentibus, nitidis. *Folia* longe petiolata, lamina albido-velutina, cordato-rotundata, usque 6 poll. diametro, interdum obscure vel distincte trilobata, denticulata, lobis parvis acuminatis distantibus, petiolis inferioribus 4–6-pollicaribus. *Flores* flavi, laxe cymoso-paniculati, circiter 1 poll. diametro; calycis lobi breves, late ovati, obtusiusculi; petala obovato-rotundata, circiter 6 lin. longa; ovarium 8–9-loculare, stigmatibus capitatis. *Carpella* matura sæpissime 3-sperma, subcoriacea, calyce triplo longiora, apice brevissime cornuta.

South Mexico, Tlacolola, Oaxaca (*Andrieux*, 522). Hb. Kew.

4. **Abutilon asiaticum**, Don, Gen. Syst. i. p. 503.

Sida asiatica, Linn. Cav. Diss. i. t. 7. fig. 2, and v. t. 128. fig. 1.

South Mexico (*Beechey*).—Spread over the Tropics of both hemispheres. Hb. Kew.

5. **Abutilon blandum**, Fenzl, Delect. Sem. Hort. Bot. Vindob. 1858.

South Mexico, Los Baños, 1000 feet (*Heller*).

6. **Abutilon crispum**, Don, Gen. Syst. i. p. 502.

Through the South-eastern States of North America to Florida.—North Mexico, Monterey, Nuevo Leon (*Eaton & Edwards*, 7), Chihuahua and Sonora (*Thurber*); South Mexico, Zimapan (*Coulter*, 820, 821), Acapulco (*Sinclair*), Mitla, near Oaxaca (*Andrieux*, 523), Tlalpujahua (*Keerl*); Nicaragua, Gulf of Fonseca (*Sinclair*).—Venezuela, St. Vincent, and Cuba. Also in the Western Peninsula of India. Hb. Kew.

7. **Abutilon cymosum**, Pl. et Tr. Prodr. Fl. N. Gran. i. p. 185.

Abutilon rufinerve, Seem. non St.-Hil.

Panama, Boquete, Veraguas (*Seemann*, 1628).—Colombia. Hb. Kew.

8. **Abutilon divaricatum,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 204.

South Mexico, Mirador (*Linden*, 1378), Vera Cruz, woods at 3000 feet (*Galeotti*, 4071). Hb. Kew.

9. **Abutilon erosum,** Schl. in Linnæa, xi. p. 367.

North Mexico, Monterey, Nuevo Leon (*Platz*); South Mexico, Tlalpujahua (*Keerl*). Hb. Kew.

10. **Abutilon elatum,** Griseb. Fl. Brit. W. Ind. p. 79.

Sida elata, Macf.

South Mexico, Cuernavaca (*Bilimek*, 52).—Jamaica. Hb. Kew.

11. **Abutilon floribundum,** Schl. in Linnæa, xi. p. 366.

South Mexico, Zimapan (*Coulter*, 817), Tlalpujahua (*Keerl*). Hb. Kew.

12. **Abutilon giganteum,** Presl, Reliq. Hænk. ii. p. 116.

Sida gigantea, Jacq. Hort. Schœnb. ii. t. 141.

South Mexco, near Acapulco (*Hænke*).—Colombia.

13. **Abutilon graveolens,** Wight et Arn. Prodr. i. p. 56.

Abutilon hirtum, Don.

Sida hirta, Lamk.

Panama (*S. Hayes*, 545), Veraguas and Isle of Taboga (*Seemann*).—Tropics of both hemispheres. Hb. Kew.

14. **Abutilon hænkeanum,** Presl, Reliq. Hænk. ii. p. 115.

South Mexico, western side (*Hænke*).

15. **Abutilon hypoleucum,** A. Gray, Pl. Wright. i. p. 20 in adnot.

Texas.—North Mexico, Monterey, Nuevo Leon (*Platz*, *Berlandier*, *Gregg*); South Mexico, Zimapan (*Coulter*).—Cuba. Hb. Kew.

16. **Abutilon integerrimum,** Hook. Bot. Mag. t. 4360.

Mexico (*Parkinson*).—Colombia. Hb. Kew

17. **Abutilon macranthum,** Peyr. in Linnæa, xxx. p. 59.

South Mexico, Zacuapan, 2000 feet (*Heller*).

18. **Abutilon mexicanum,** Presl, Reliq. Hænk. ii. p. 115.

South Mexico, western side (*Hænke*).

19. **Abutilon notolophium,** A. Gray, in Proc. Am. Acad. v. p. 175.

South Mexico, hills at Tantoyuca (*Berlandier*, 743 and 2163).

20. **Abutilon palmeri,** A. Gray, in Proc. Am. Acad. viii. p. 289.

Arizona.—North Mexico.

21. **Abutilon racemosum,** Schl. in Linnæa, xi. p. 367.

South Mexico, Tlalpujahua (*Keerl*).

22. **Abutilon ramosissimum,** Presl, Reliq. Hænk. ii. p. 116.

South Mexico, Acapulco (*Hænke*).

23. **Abutilon rufescens,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 202.

South Mexico, Vera Cruz (*Linden*, 1377).

24. **Abutilon sessilifolium,** Presl, Reliq. Hænk. ii. p. 113.

South Mexico.

25. **Abutilon sidoides,** Hemsley, Diag. Pl. Nov. pars alt. p. 24.

Dense breviterque pubescens, ramis crassiusculis rectis, foliis deflexis petiolatis membranaceis cordato-ovatis crenato-dentatis, floribus parvis in cymas axillares paucifloras breviter pedunculatas dispositis, calycis lobis ovatis acute acuminatis petalis subæquilongis, ovario sæpissime 8-loculari, stigmatibus capitatis, carpellis quam calyx longioribus apice longiuscule biaristatis sæpissime 3-spermis.

Herba? erecta, omnino dense breviterque pubescens, ramis (vel caulibus?) crassiusculis rectis. *Folia* deflexa, petiolata, membranacea, cordato-ovata, cum petiolo $2\frac{1}{2}$–5-pollicaria, crenato-dentata, sub-3–5-nervia, petiolo 6–18 lin. longo, stipulis filiformibus circiter 3 lin. longis deciduis. *Flores* (flavi?) 6–8 lin. diametro, in cymas parvas axillares breviter pedunculatas dispositi; calycis lobi ovati, acute acuminati, petalis fere æquilongi; ovarium sæpissime 8-loculare, stigmatibus capitatis. *Carpella* matura calyce longiora, sæpissime 3-sperma, apice longiuscule biaristata, aristis rigidis divaricatis.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 80). Hb. Kew.

26. **Abutilon sonoræ,** A. Gray, in Smithson. Contrib. v. p. 23.

North Mexico, Sonora (*Wright*). Hb. Kew.

27. **Abutilon texense,** Torr. et Gray, Fl. N. Am. i. p. 231.

Texas; New Mexico.—North Mexico, valley of the Cocospera and Magdalena, Sonora (*Schott*, *Thurber*), Monterey, Nuevo Leon (*Gregg*). Hb. Kew.

28. **Abutilon thurberi,** A. Gray, Pl. Thurb. p. 307.

Texas.—North Mexico, Magdalena, Sonora (*Thurber*, 911; *Palmer*). Hb. Kew.

29. **Abutilon trilobatum,** Hemsley, Diag. Pl. Nov. pars alt. p. 24.

Longe pilosum et stellato-pubescens, ramis teretibus, foliis graciliter petiolatis membranaceis cordato-ovatis inæqualiter trilobatis dentatis, lobis lateralibus brevibus, floribus mediocribus solitariis et cymoso-paniculatis, cymis supremis sæpissime unilateraliter evolutis, calycis lobis ovatis longissime subulato-acuminatis 1-costatis, petalis late obcordatis, ovario hirsuto 5-loculari, loculis sæpissime 5–6-ovulatis, stigmatibus capitatis, carpellis maturis parvis calyce brevioribus vix rostratis 2–4-spermis.

Frutex ramosus, ramis teretibus graciliusculis petiolisque longe pilosis, pilis patentissimis. *Folia* graciliter petiolata, membranacea, subtus pallidiora, præcipue subtus stellato-pubescentia, late et profunde cordato-ovata, inæqualiter trilobata, dentata, cum petiolo 3–6-pollicaria, lobis acuminatis obtusiusculis, lateralibus brevibus divaricatis, petiolo 1–3 poll. longo; stipulis lineari-subulatis, circiter 6 lin. longis, deciduis. *Flores* (flavi vel albi) 12–15 lin. diametro, solitarii et cymoso-paniculati, cymis supremis sæpissime unilateraliter evolutis; calyx albo-pubescens et pilosus, lobis ovatis longissime subulato-acuminatis quam petala triente brevioribus unicostatis;

petala late obcordata; ovarium 5-loculare, loculis sæpissime 5–6-ovulatis, stylis fere basi discretis, stigmatibus capitatis. *Carpella* matura hirsuta, superne rotundata, vix rostrata, calyce breviora, 2–4-sperma.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 81). Hb. Kew.

30. **Abutilon triquetrum,** Presl, Reliq. Hænk. ii. p. 115.

Sida triquetra, Linn. Cav. Diss. t. 5. fig. 1; Jacq. Hort. Vindob. ii. t. 118.

South Mexico, western side (*Hænke, Ghiesbreght*, 349).—Cuba. Hb. Kew.

31. **Abutilon venosum,** Lem. Fl. des Serres, ii. t. 5.

South Mexico (*Schiede*). Hb. Kew.

32. **Abutilon wrightii,** A. Gray, Pl. Lindh. p. 162 in adnot.

Texas.—North Mexico, Sonora Alta (*Coulter*, 840), Azufrora (*Gregg*, 495). Hb. Kew.

33. **Abutilon,** sp.

South Mexico, near Jalapa (*Galeotti*, 4103), Palmilla, Vera Cruz (*Linden*, 1379). Hb. Kew.

34. **Abutilon,** sp.

South Mexico, Zimapan (*Coulter*, 818). Hb. Kew.

35. **Abutilon,** sp.

North Mexico, Sonora Alta (*Coulter*, 812). Hb. Kew.

36. **Abutilon,** sp.

South Mexico, near Tantoyuca (*Ervendberg*, 161).

37. **Abutilon,** sp. (*A. striato* affinis).

South Mexico, valley of Cordova (*Bourgeau*, 1818), Orizaba (*Sallé*). Hb. Kew.

38. **Abutilon,** sp.?

South Mexico, valley of Cordova (*Bourgeau*, 7512). Hb. Kew.

39. **Abutilon,** sp.

South Mexico, valley of Cordova (*Bourgeau*, 1740). Hb. Kew.

40. **Abutilon,** sp.?

South Mexico, valley of Cordova (*Bourgeau*, 2120). Hb. Kew.

41. **Abutilon,** sp.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 79). Hb. Kew.

42. **Abutilon,** sp.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 90½). Hb. Kew.

10. PERIPTERA.

Periptera, DC. Prodr. i. p. 459; Benth. et Hook. Gen. Plant. i. p. 199.

1. **Periptera punicea,** DC. Prodr. i. p. 459.

Sida periptera, Sims, Bot. Mag. t. 1644.

Anoda punicea, Lag. Nov. Gen. et Sp. t. 21.

MEXICO?

Bentham and Hooker refer this with a doubt to *Abutilon.*

11. SPHÆRALCEA.

Sphæralcea, St.-Hil. Pl. Us. Bras. t. 52 (*Sphæroma,* Schl.); Benth. et Hook. Gen. Plant. i. p. 204.

Herbs, undershrubs, or shrubs. About twenty-five species, whereof four are South-African, and the rest American, some North and some South.

1. **Sphæralcea angustifolia,** St.-Hil.

Malva angustifolia, Cav. Diss. i. p. 64, t. 20; Bot. Mag. t. 2839.

Sphæroma angustifolium, Schl. in Linnæa, xi. p. 353.

TEXAS, NEW MEXICO, CALIFORNIA.—NORTH MEXICO, Fronteras, Sonora (*Thurber*), Saltillo, Nuevo Leon (*Platz*), Zacatecas (*Hartweg*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 83, 84, and 85); SOUTH MEXICO, near the city of Mexico and Pachuca (*Ehrenberg*), Yotla (*Andrieux*, 515), Oaxaca (*Ghiesbreght*, 64), Real del Monte (*Coulter*, 838), and without localities (*Bates*, *Mackenzie*, *Graham*, &c.). Hb. Kew.

2. **Sphæralcea emoryi,** Nutt. in Gray, Pl. Fendl. p. 23.

NORTH MEXICO, Rinconada and Saltillo (*Gregg*).

3. **Sphæralcea fendleri,** A. Gray, Pl. Wright. i. p. 21.

NEW MEXICO, CALIFORNIA.—NORTH MEXICO, Santa Cruz, Sonora (*Thurber*). Hb. Kew.

4. **Sphæralcea filicaulis,** Torr. et Gray, Fl. N. Amer. i. p. 232.

Var. **setosa.**

NORTH MEXICO, Chihuahua and Monterey (*Gregg*).

The typical form is a native of TEXAS.

5. **Sphæralcea floribunda,** Walp. Rep. ii. p. 789.

Sphæroma floribundum, Schl. in Linnæa, xi. p. 353.

SOUTH MEXICO, Oaxaca, 7000 feet (*Galeotti*, 4088). Hb. Kew.

6. **Sphæralcea incana,** Torr. et Gray, Pl. Fendl. p. 23.

North Mexico.

Var. α. **typica,** Laguna los Potos &c., Chihuahua (*Thurber*).

Var. β. **dissecta,** Chihuahua (*Scott, Thurber, & Wislizenus*).

Var. γ. **obongifolia,** banks of the Rio Grande, near San Elizario.

7. **Sphæralcea nutans,** Scheidw. in Fl. des Serres, vii. t. 726.

Guatemala ?

8. **Sphæralcea umbellata,** St.-Hil. Cav. Ic. i. t. 95.

Sphæralcea galeottii, Turcz.

Malva rosea, DC. Prodr. i. p. 435; Calques des Dess. Fl. Mex. 58.

South Mexico, on the eastern slope of the mountains near Jalapa (*Humboldt & Bonpland*), Oaxaca (*Galeotti*, 4102), Zimapan (*Coulter*, 801), without special localities (*Bates*, *Parkinson*, and others), Sierra San Pedro Nolasco &c. (*Jurgensen*, 529), Orizaba (*Bourgeau*, 3100). Hb. Kew.

9. **Sphæralcea vitifolia,** Benth. et Hook. Gen. Pl. i. p. 205.

Meliphlea vitifolia, Zucc. Pl. Nov. fasc. ii. p. 52, t. 9.

Mexico.

10. **Sphæralcea wrightii,** A. Gray, Pl. Wright. ii. p. 21.

Sphæroma wrightii, Schl.

Utah, California, Texas.—North Mexico, mountains near Lake Santa Maria, Chihuahua (*Wright*). Hb. Kew.

11. **Sphæralcea,** sp.

South Mexico, Zimapan (*Coulter*, 800; *Bates*). Hb. Kew.

12. MODIOLA.

Modiola, Mœnch, ex DC. Prodr. i. p. 435; Benth. et Hook. Gen. Plant. i. p. 205.

Several forms have been described as species; but they all appear to be varieties of one annual species widely dispersed in America.

1. **Modiola caroliniana,** G. Don, Gen. Syst. i. p. 466.

Modiola multifida, Mœnch, Meth. 620; A. Gray, Gen. Ill. t. 128; St.-Hil. Fl. Bras. Merid. i. t. 43.

Malva caroliniana, Linn.

Southern States of North America to—South Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 74), Moran, 8040 feet (*Humboldt & Bonpland*), near Mineral del Monte (*Ehrenberg*), near the city of Mexico (*Hegewisch*), in grassy places in Monte Maculteпec, near Jalapa (*Schiede*), roadsides near the city of Mexico (*Bourgeau*, 31).—Also in South America, southward to Chili and Uruguay, and in Jamaica and Juan Fernandez. Hb. Kew.

Tribe URENEÆ.

13. MALACHRA.

Malachra, Linn. Mant. n. 1266; Benth. et Hook. Gen. Plant. i. p. 205.

About five or six herbaceous species native of America, and one or two widely dispersed in the Old World.

1. **Malachra bracteata,** Cav. Diss. ii. t. 34. fig. 2.

SOUTH MEXICO, Tepic (*Lay*).

2. **Malachra capitata,** Linn. Syst. 518; Act. Ups. 1743, p. 137, t. 2.

Malachra alceæfolia, Jacq. Ic. Par. iii. t. 549.
Malachra conglomerata, Turcz.
Malachra mexicana, Schrad.

SOUTH MEXICO to PANAMA.—And widely dispersed in SOUTH AMERICA and also in W. Tropical AFRICA and Tropical ASIA, though probably introduced into the Old World. Hb. Kew.

3. **Malachra digitata,** Presl, Reliq. Hænk. ii. p. 126.

SOUTH MEXICO (*Hænke*).

4. **Malachra palmata,** Mœnch, ex DC. Mém. Genève, 1831, p. 25, t. 5.

Malachra triloba, Desf.

MEXICO?, WEST INDIES.

5. **Malachra radiata,** Linn. Syst. p. 518; Cav. Diss. ii. t. 33. fig. 3.

Sida radiata, Linn.

SOUTH MEXICO (*Beechey*); PANAMA, Chagres (*Fendler*, 23), roadsides near the city of Panama (*Seemann*).—WEST INDIES, Tropical S. AMERICA, and in West Tropical AFRICA. Hb. Kew.

6. **Malachra urticæfolia,** Presl, Reliq. Hænk. ii. p. 125.

MEXICO.

14. URENA.

Urena, Linn. Gen. Plant. n. 844; Benth. et Hook. Gen. Plant. i. p. 205.

Herbs or shrubs. Four or five species in the tropics of the Old World, and one or two extending to America.

1. **Urena grandiflora,** DC. Prodr. i. p. 442; Calques des Dess. Fl. Mex. 61.

MEXICO.

2. **Urena hænkeana,** Walp. Rep. i. p. 297.

Urena heterophylla, Presl.

PANAMA.

3. **Urena lobata,** Linn. Sp. Pl. 974; Dill. Hort. Elth. t. 319. fig. 412.
Urena americana, Sm.
MEXICO. Hb. Kew.
Widely dispersed in Tropical AMERICA and in the tropics of the OLD WORLD.

15. PAVONIA.

Pavonia, Cav. Diss. iii. p. 132, t. 45 ad 47, 49; Benth. et Hook. Gen. Plant. i. p. 205.

Upwards of sixty herbaceous and shrubby species, spread over nearly all tropical and subtropical countries, but most numerous in America.

1. **Pavonia alba,** Seem. Bot. Voy. Herald, p. 81.
PANAMA, Cerro de Ancon (*Seemann*), without locality (*Halsted*). Hb. Kew.

2. **Pavonia arachnoidea,** Presl, Reliq. Hænk. ii. p. 129.
SOUTH MEXICO, west side (*Hænke*).

3. **Pavonia glandulosa,** Presl, Reliq. Hænk. ii. p. 129.
SOUTH MEXICO, west side (*Hænke*).

4. **Pavonia heterophylla,** Turcz. in Bull. Soc. Nat. Mosc. 1858, p. 189.
SOUTH MEXICO (*Galeotti*, 4192).

5. **Pavonia hirtiflora,** Benth. Pl. Hartw. p. 7.
SOUTH MEXICO, Aguas Calientes (*Hartweg*, 23). Hb. Kew.

6. **Pavonia lanceolata,** Schl. in Linnæa, xi. p. 356.
SOUTH MEXICO, Cuesta Grande de Chiconquiaco (*Schiede*).

7. **Pavonia mutisii,** H. B. K. Nov. Gen. et Sp. v. p. 283.
GUATEMALA (*Skinner*).—COLOMBIA. Hb. Kew.

8. **Pavonia mexicana,** H. B. K. Nov. Gen. et Sp. v. p. 284.
SOUTH MEXICO, near the town of Acaguisotla, and between Acapulco and Chilpancingo (*Humboldt & Bonpland*), Acapulco (*Sinclair*). Hb. Kew.

9. **Pavonia paniculata,** Cav., H. B. K. Nov. Gen. et Sp. v. p. 280.
Pavonia caracasana, Turcz.
Pavonia corymbosa, DC.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1513); PANAMA, Empire railway-station (*S. Hayes*, 518), Hacienda de Cocoli (*Seemann*).—Tropical S. AMERICA. Hb. Kew.

10. **Pavonia racemosa,** Sw. Fl. Ind. Occ. ii. p. 1215.
Pavonia spicata, Cav. Diss. iii. t. 46. fig. 1.
PANAMA, Aspinwall (*S. Hayes*, 147).—WEST INDIES and Tropical S. AMERICA. Hb. Kew.

11. **Pavonia racemiflora,** Hook. et Arn. Bot. Beech. Voy. p. 277.

South Mexico, Tepic (*Lay*). Hb. Kew.

12. **Pavonia rosea,** Schl. in Linnæa, xi. p. 355.

South Mexico, region of Orizaba (*Bourgeau*, 2721), Jalapa (*Galeotti*, 4083), Mirador (*Galeotti*, 830), Hacienda de la Laguna (*Schiede*); Costa Rica (*Endres*, 208). Hb. Kew.

13. **Pavonia scabra,** Presl, Reliq. Hænk. ii. p. 129.

South Mexico, west side (*Hænke*).

14. **Pavonia sessiliflora,** H. B. K. Nov. Gen. et Sp. v. p. 281.

Pavonia bracteosa, Bth.
Malachra ovata, Presl.

Panama, Chagres (*Fendler*, 21), Veraguas (*Seemann*).—W. Indies, Colombia, Guiana to Brazil. Hb. Kew.

15. **Pavonia spinifex,** Willd. Sp. Pl. iii. p. 854.

Pavonia communis, St.-Hil. Fl. Bras. Merid.

A very common and variable species in Tropical America and the West Indies.

In DC. Prodr. i. p. 443, the following varieties are distinguished; but they are connected by intermediate forms:—

Var. α. **ovalifolia,** Cav. Diss. iii. p. 133, t. 45. fig. 2.

Var. β. **aristata,** Cav. Diss. iii. p. 133, t. 45. fig. 3.

Var. γ. **oblongifolia,** DC. Calques des Dess. Fl. Mex. 59.

Var. δ. **grandiflora,** DC. Calques des Dess. Fl. Mex. 60.

South Mexico, region of Orizaba (*Bourgeau*, 2906; *Botteri*, 774); Panama (*Seemann*). Hb. Kew.

16. **Pavonia typhalea,** Cav. Diss. ii. p. 134, et vi. t. 197.

Var. α. **genuina.**

Panama, Chagres (*Fendler*, 320).

Var. β. **nemoralis.**

South Mexico, Vera Cruz (*Mercier*); Panama, near Cerro de Ancon (*Seemann*).—Northern part of South America and the West Indies. Hb. Kew.

17. **Pavonia urticæfolia,** Presl, Reliq. Hænk. ii. p. 128.

Mexico.

18. **Pavonia velutina,** St.-Hil. Fl. Bras. Merid. i. p. 233.

Lopimia malacophylla, Nees et Mart. Bot. Mag. t. 4365.
Pavonia malacophylla, Wright.

South Mexico (*Jurgensen*, 909); Panama (*S. Hayes*, 482).—Widely spread in Tropical S. America and in Cuba. Hb. Kew.

19. **Pavonia wrightii,** A. Gray, Gen. Ill. ii. p. 76, t. 130.

Pavonia lasiopetala, Scheele.

TEXAS.—NORTH MEXICO, shady borders of the tributaries of the lower Rio Grande (*Torrey*), Monterey, Nuevo Leon (*Edwards & Eaton*); SOUTH MEXICO, Zimapan (*Coulter*, 840). Hb. Kew.

20. **Pavonia,** sp. (aff. *P. typhaleæ*).

GUATEMALA (*Friedrichsthal*). Hb. Kew.

21. **Pavonia,** sp. (aff. *P. typhaleæ*).

COSTA RICA (*Endres*, 208 bis); NICARAGUA (*Tate*, 29). Hb. Kew.

22. **Pavonia,** sp.

NORTH MEXICO, Monterey, Nuevo Leon (*Eaton & Edwards*, 5). Hb. Kew.

23. **Pavonia,** sp.

GUATEMALA (*Friedrichsthal*). Hb. Kew.

16. MALVAVISCUS.

Malvaviscus, Dill. ex Cav. Diss. p. 131, t. 48. fig. 1; Benth. et Hook. Gen. Plant. i. p. 206.

Shrubs or small trees. Bentham and Hooker estimate the number of species at about half a dozen; and several of the following names refer to obscure plants.

1. **Malvaviscus acapulcensis,** H. B. K. Nov. Gen. et Sp. v. p. 288.

SOUTH MEXICO, Acapulco, sea-shore (*Humboldt & Bonpland*), Chiapas (*Ghiesbreght*), Mexico (*Beechey*). Hb. Kew.

2. **Malvaviscus acerifolius,** Presl, Reliq. Hænk. ii. p. 135.

SOUTH MEXICO, west side (*Hænke*).

3. **Malvaviscus arboreus,** Cav. Diss. iii. p. 131, t. 48. fig. 1.

NORTH MEXICO, Mazatlan, common (*Seemann*); SOUTH MEXICO, in thickets near Vera Cruz (*Schiede & Deppe*), near Tantoyuca (*Ervendberg*); GUATEMALA (*Friederichsthal*); PANAMA (*Duchassaing*).—Also common in the WEST INDIES, including CUBA. Hb. Kew.

4. **Malvaviscus brevipes,** Benth. Bot. Voy. Sulph. p. 68.

SOUTH MEXICO, at the foot of the Cerro de San Felipe, near Oaxaca (*Andrieux*, 520); NICARAGUA, Gulf of Fonseca (*Sinclair*). Hb. Kew.

5. **Malvaviscus candidus,** DC. Prodr. i. p. 445; Calques des Dess. Fl. Mex. 90.

MEXICO.

6. **Malvaviscus concinnus,** H. B. K. Nov. Gen. et Sp. v. p. 286.

SOUTH MEXICO, in hedges near Jalapa (*Schiede & Deppe*).

The typical plant is a native of PERU.

7. **Malvaviscus drummondii,** Torr. et Gr. Fl. N. Am. i. p. 230.

Texas.—South Mexico, around Toluca (*Andrieux*, 519).—Cuba. Hb. Kew.

8. **Malvaviscus? flavidus,** DC. Prodr. i. p. 446. [= Anoteа flavida (DC.) Ulbr.]

Mexico.

9. **Malvaviscus grandiflorus,** H. B. K. Nov. Gen. et Sp. v. p. 288.

South Mexico, Guanaxuato (*Humboldt & Bonpland*), between Gonacatepec and Chalco (*Andrieux*, 518), without special localities (*Jurgensen*, 182 and 296; *Graham &c.*). Hb. Kew.

10. **Malvaviscus mollis,** DC. Prodr. i. p. 445.

Achania mollis, Ait.

South Mexico, Zimapan (*Coulter*, 807), Mexico (*Bates*); Guatemala (*Skinner*); Nicaragua (*Tate*, 28), Gulf of Fonseca (*Sinclair*); Panama, Veraguas (*Seemann*).—Colombia. Hb. Kew.

11. **Malvaviscus penduliflorus,** DC. Prodr. i. p. 445; Calques des Dess. Fl. Mex. 91.

Mexico.

12. **Malvaviscus pentacarpus,** DC. Prodr. i. p. 445; Calques des Dess. Fl. Mex. 88.

Mexico.

13. **Malvaviscus pilosus,** DC. Prodr. i. p. 445.

Guatemala, Dueñas (*Salvin & Godman*; *Fraser*), Volcan de Fuego (*Salvin*); Panama, Island of Taboga (*Sinclair*).—Tropical South America and West Indies. Hb. Kew.

14. **Malvaviscus populifolius,** Presl, Reliq. Hænk. ii. p. 135.

Mexico.

15. **Malvaviscus? pleurantherus,** DC. Prodr. i. p. 446.

Mexico.

16. **Malvaviscus? pleurogonus,** DC. Prodr. i. p. 446.

Mexico.

17. **Malvaviscus sepium,** Schl. in Linnæa, xi. p. 361.

South Mexico, in hedges near Jalapa (*Schiede*; *Galeotti*, 4078; *Linden*, 824; *Coulter*, 808), valley of Cordova (*Bourgeau*, 1515 and 1669), Yucatan and Tabasco (*Johnson*, 67), Teguisixtlan (*Andrieux*, 517); Nicaragua (*Tate*, 27). Hb. Kew.

17. KOSTELETZKEYA.

Kosteletzkeya, Presl, Reliq. Hænk. ii. p. 130, t. 70; Benth. et Hook. Gen. Plant. i. p. 206.

Herbs or shrubs, about ten species, restricted to America.

1. **Kosteletzkeya cordata,** Presl, Reliq. Hænk. ii. p. 132.

MEXICO.

2. **Kosteletzkeya coulteri,** A. Gray, Pl. Wright. i. p. 23.

NORTH MEXICO, Sonora Alta (*Coulter*, 804). Hb. Kew.

3. **Kosteletzkeya hastata,** Presl, Reliq. Hænk. ii. p. 130.

SOUTH MEXICO, Cordillera of Vera Cruz (*Galeotti*, 4061). Hb. Kew.

4. **Kosteletzkeya hispida,** Presl, Reliq. Hænk. ii. p. 132.

MEXICO.

5. **Kosteletzkeya paniculata,** Benth. Pl. Hartw. p. 285.

NORTH MEXICO, mountain-pass near Cocospera river, Sonora (*Schott*), Bolaños (*Hartweg*). Hb. Kew.

6. **Kosteletzkeya pentasperma,** Griseb. Fl. Brit. W. Ind. p. 79.

MEXICO (*Grisebach*, loc. cit.).—JAMAICA, ECUADOR.

7. **Kosteletzkeya sagittata,** Presl, Reliq. Hænk. ii. p. 131, t. 70.

Kosteletzkeya asterocarpa, Turcz.

NICARAGUA, Gulf of Fonseca (*Sinclair*).—WEST INDIES, COLOMBIA, &c. Hb. Kew.

This probably should include *K. pentasperma* and *K. hastata.*

18. ARCYNOSPERMUM.

Arcynospermum, Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 191.

"*Genus dubium Urenarum,*" Benth. et Hook. Gen. Plant. i. p. 199.

1. **Arcynospermum nodiflorum,** Turcz. loc. cit.

MEXICO, Sierra San Pedro Nolasco (*Jurgensen*).

Tribe HIBISCEÆ.

19. HIBISCUS.

Hibiscus, Linn. Gen. Plant. n. 846; Benth. et Hook. Gen. Plant. i. p. 207.

A very large genus, comprising nearly 150 species of herbs, shrubs, and trees, dispersed in nearly all tropical and subtropical countries of the world.

1. **Hibiscus abelmoschus,** Linn., Sp. Pl. p. 980; DC. Prodr. i. p. 452.

This species is commonly cultivated and naturalized in most tropical countries; and, according to Grisebach, it is said to be spontaneous in GUIANA and CENTRAL AMERICA.

2. **Hibiscus acetosæfolius,** DC. Prodr. i. p. 455; Calques des Dess. Fl. Mex. 79.
South Mexico (*Sessé*), ? Chiapas (*Ghiesbreght*). Hb. Kew.

3. **Hibiscus achanioides,** Turcz. in Bull. Soc. Nat. Mosc. 1858, p. 196 (sub *abelmoscho*).
South Mexico, shady forests of Teapa (*Linden*, 938). Hb. Kew.

4. **Hibiscus azanzæ,** DC. Prodr. i. p. 454; Calques des Dess. Fl. Mex. 75 et ii. a.
Paritium azanzæ, Don.
South Mexico, Tepic (*Lay*). Hb. Kew.

5. **Hibiscus berlandierianus,** Moric. Pl. Am. Rar. p. 8, t. 6.
North Mexico, Tampico (*Berlandier*, 54); South Mexico, Tantoyuca (*Berlandier*, 2160). Hb. Paris.

6. **Hibiscus bifurcatus,** Cav. Diss. iii. p. 146, t. 51. fig. 1.
Panama, Chagres (*Fendler*, 19).—Brazil, Guiana, West Indies. Hb. Kew.

7. **Hibiscus bracteosus,** DC. Prodr. i. p. 455; Calques des Dess. Fl. Mex. 79.
Mexico (*Sessé*).

8. **Hibiscus cardiophyllus,** A. Gray, Pl. Wright. i. p. 22.
Texas.—North Mexico, near Monterey, Nuevo Leon (*Eaton & Edwards*; *Gregg*, 185; *Wislizenus*); South Mexico, Zimapan (*Coulter*, 805), without locality (*Bates*). Hb. Kew.

9. **Hibiscus coulteri,** Harv. in A. Gray, Pl. Wright. i. p. 23.
Texas; New Mexico.—North Mexico, near Monterey, Nuevo Leon (*Edwards*), Paso de Caritas (*Gregg*); South Mexico, Zimapan (*Coulter*, 809). Hb. Kew.

10. **Hibiscus cruentus,** Bert. Fl. Guat. p. 28, t. 10.
Guatemala, Esquintla (*Velasquez*).

11. **Hibiscus cyanogynus,** DC. Prodr. i. p. 455; Calques des Dess. Fl. Mex. 77.
Mexico (*Sessé*).

12. **Hibiscus denudatus,** Benth. Bot. Voy. Sulph. p. 7, t. 3.
Texas, New Mexico, and Lower California.—North Mexico, from El Paso down to the Cibolo (*Torrey*), Cerros Bravos (*Gregg*, 481).

13. **Hibiscus elatus,** Sw. Fl. Ind. Occ. ii. p. 1218.
South Mexico, in woods, Tecoluta (*Schiede*).—West Indies.

14. **Hibiscus fasciculatus,** DC. Prodr. i. p. 454; Calques des Dess. Fl. Mex. 85.
Mexico (*Sessé*).

15. **Hibiscus lavateroides,** Moric. Pl. Am. Rar. p. 9, t. 7.
Mexico, Tampico (*Berlandier*?).

16. **Hibiscus marmoratus,** Lem. Ill. Hort. 1856, t. 82; Bot. Mag. t. 5702.
MEXICO, cultivated in European gardens from seeds sent by A. Tonel.

17. **Hibiscus oxyphyllus,** DC. Prodr. i. p. 455; Calques des Dess. Fl. Mex. 86.
SOUTH MEXICO, mountains of Xochipi (*Sessé*).

18. **Hibiscus phœniceus,** Willd. Sp. Pl. iii. p. 813; Jacq. Hort. Schœnb. iii. t. 14.
Hibiscus betulifolius, Benth.
Hibiscus betulinus, H. B. K.
PANAMA, Island of Taboga (*Sinclair*).—BRAZIL, GUIANA, COLOMBIA, and in many of the WEST-INDIAN ISLANDS. Hb. Kew.

19. **Hibiscus spathulatus,** Garcke in Bot. Zeit. vii. p. 840.
PANAMA, Chagres (*Duchassaing*).

20. **Hibiscus spiralis,** Cav. Ic. ii. p. 47, t. 162.
Hibiscus unilateralis, Cav.
SOUTH MEXICO, Province of Mexico (*Parkinson, Tate*), common in thickets near the capital (*Schaffner*), near Mexico (*Berlandier*, 874). Hb. Kew.

21. **Hibiscus tampicensis,** Moric. Pl. Am. Rar. p. 7, t. 5.
MEXICO, near Tampico de Tamaulipas (*Berlandier*, 210). Hb. Paris.

22. **Hibiscus tiliaceus,** Linn. Sp. Pl. p. 976; Cav. Diss. iii. t. 55. fig. 1.
SOUTH MEXICO, La Antigua, Vera Cruz (*Linden*, 834), Oaxaca (*Ghiesbreght*, 329), Jalapa (*Galeotti*); GUATEMALA (*Friedrichsthal*); PANAMA (*Seemann, Fendler, S. Hayes*). —A common tree on the sea-coast of almost all TROPICAL COUNTRIES. Hb. Kew.

23. **Hibiscus tubiflorus,** DC. Prodr. i. p. 447; Calques des Dess. Fl. Mex. 83.
MEXICO, mountains of San Gerónimo (*Moçino & Sessé*).

24. **Hibiscus uncinellus,** DC. Prodr. i. p. 449; Calques des Dess. Fl. Mex. 82.
SOUTH MEXICO, Jalapa (*Galeotti*, 4085), valley of Cordova (*Bourgeau*, 1514), near Los dos Puentes and Hacienda de la Laguna (*Schiede*). Hb. Kew.

25. **Hibiscus,** sp.
SOUTH MEXICO, Mirador, Vera Cruz (*Linden*, 839). Hb. Kew.

26. **Hibiscus,** sp.
MEXICO (*Bates*, 12). Hb. Kew.

27. **Hibiscus,** sp.
SOUTH MEXICO, at the mouth of the river Guazacualcos, near the port of Minatitlan, Vera Cruz (*Andrieux*, 521). Hb. Kew.

20. THESPESIA.

Thespesia, Corr. in Ann. Mus. Par. ix. p. 290, t. 8. fig. 2; Benth. et Hook. Gen. Plant. i. p. 208.

An Old-World genus, one species of which, *T. populnea*, is naturalized in the West Indies, and perhaps also on the mainland of America.

1. **Thespesia tomentosa,** Presl, Reliq. Hænk. ii. p. 136.

South Mexico, western side (*Hænke*).

This is a doubtful plant, and most likely belongs to a different genus. (= Hampea tomentosa (Presl) Standl.)

21. BOMBYCOSPERMUM.

Bombycospermum, Presl, Reliq. Hænk. ii. p. 137, t. 71.

Bentham and Hooker (*Gen. Plant.* i. p. 208) refer it with a doubt to the genus *Fugosia.*

1. **Bombycospermum mexicanum,** Presl, loc. cit.

South Mexico, west side (*Hænke*).

22. INGENHOUSIA.

Ingenhousia, Moç., DC. Prodr. i. p. 474; Benth. et Hook. Gen. Plant. i. p. 209.
Thurberia, A. Gray in Mem. Amer. Acad. v. p. 308.

Limited to the following herbaceous species:—

1. **Ingenhousia triloba,** Moç. in DC. Prodr. i. p. 474.

Thurberia thespesioides, A. Gray, loc. cit. et in Torrey's Bot. Emory's Exped. t. 6.

Mexico (*Moçino & Sessé*), Cañon near Cocospera and Ymuris, Sonora (*Thurber*).

23. GOSSYPIUM.

Gossypium, Linn. Gen. Plant. n. 845; Benth. et Hook. Gen. Plant. i. p. 209.

Herbs or tall shrubs, about three or four species. The cultivated ones present a great range of variation; and it is now impossible to determine their native countries. One undoubtedly indigenous species is a native of Australia, and another of North-west India.

1. **Gossypium barbadense,** Linn. Sp. Pl. p. 975.

Cultivated and wild, probably indigenous in America.

Tribe (or Suborder) BOMBACEÆ.

Represented in all tropical countries, but by far most numerously in America.

24. PACHIRA.

Pachira, Aubl. Pl. Guian. p. 725, tt. 291, 292 (*Carolinea,* Linn. fil. Suppl. p. 51); Benth. et Hook. Gen. Plant. i. p. 210.

About fifteen arboreous species, restricted to Tropical America.

1. **Pachira aquatica,** Aubl. Guian. ii. p. 725, tt. 291, 292.

Nicaragua, vicinity of Granada (*Lévy*); Panama, Chagres (*Fendler*, 311).—Northern parts of South America; and in St. Lucia and Guadaloupe. Hb. Kew.

2. **Pachira barrigon,** Seem. Bot. Voy. 'Herald,' p. 83.

Panama, Veraguas (*Seemann*), Chagres (*Fendler*, 312). Hb. Kew.

3. **Pachira insignis,** Savign. in Enc. Bot. iv. p. 690.

Carolinea? *fastuosa,* DC. Prodr. i. p. 478; Calques des Dess. Fl. Mex. 97.

Mexico (*Sessé*).—West Indies.

4. **Pachira macrocarpa,** Sch. et Ch. in Linnæa, vi. p. 423 (sub *Carolinea*); Bot. Mag. t. 4549.

South Mexico, Yucatan and Tabasco (*Johnson*, 141), on the banks of rivers and rivulets of Papantla and Tecoluta (*Schiede & Deppe*). Hb. Kew.

5. **Pachira minor,** Sims, Bot. Mag. t. 1412 (sub *Carolinea*).

Mexico (*Sessé*).

6. **Pachira sessilis,** Benth. Bot. Voy. Sulph. p. 70.

Panama, Island of Taboga (*Hinds*, *Seemann*, 1631), in woods near the Rio Grande railway-station (*S. Hayes*). Hb. Kew.

25. BOMBAX.

Bombax, Linn. Gen. Plant. n. 835; Benth. et Hook. Gen. Plant. i. p. 210.

Trees, usually of large size. About ten species—two native of Tropical Asia, one of these extending to North Australia, one of Tropical Africa, and the rest of Tropical and Subtropical America.

1. **Bombax ellipticum,** H. B. K. Nov. Gen. et Sp. v. p. 299.

South Mexico, temperate regions near Chilpancingo (*Humboldt & Bonpland*), Tepic (*Lay*), Papantla, Misantla &c. (*Schiede & Deppe*).

2. **Bombax** (*Pachira fendleri,* Seem. Bot. Voy. 'Herald,' p. 83). Cf. *Bombax retusum,* Mart.

Panama, Chagres (*Fendler*, 310). Hb. Kew.

3. **Bombax mexicanum,** Hemsley, Diag. Pl. Nov. i. p. 4.

Ramis glabris crassis, foliis digitatis 5-foliolatis, foliolis petiolulatis obovato-ellipticis vel interdum fere rotundatis, floribus pedunculatis, calyce hemisphærico truncato, staminibus numerosissimis, filamentis basi in tubum brevem connatis, capsulis intus albido-lanatis, seminibus reniformi-globosis.

Arbor glabra, ramis crassis, mollibus. *Folia* longe petiolata, 5-foliolata, petiolo tereti pubescenti-glabrescente, ad 6 pollices longo, foliolis valde inæqualibus, petiolulatis vix coriaceis, obovato-ellipticis vel fere rotundatis, 3–6 pollices longis, $2\frac{1}{2}$–4 latis, integerrimis, supra glabris, nervis lateralibus parallelis conspicuis, venulis reticulatis, subtus petiolulisque pubescentibus, petiolulis

ad 2 lin. longis, basi vix articulatis, dilatatis. *Flores* solitarii, axillares, pedunculati, pedunculis crassis ad poll. longis, 1–2-floris; calyx glaber seu in alabastro sparse puberulus, hemisphærico-cupulatus truncatus, ad 6 lin. latus et profundus; corolla (perfecte evoluta non visa) fulvo tomentosa; stamina numerosissima, 4–5 poll. longa, filamentis filiformibus, basi in tubum brevem connatis. *Capsula* 1½–2 poll. longa, extus glabra corrugata, intus densissime albido lanata, seminibus nigris, lævibus, glabris, reniformibus.

SOUTH MEXICO, region of Orizaba (*Bourgeau*, 2515). Hb. Kew.

26. ERIODENDRON.

Eriodendron, DC. Prodr. i. p. 479; Benth. et Hook. Gen. Plant. i. p. 210.

About eight arboreous species—seven American, and one native of Tropical Africa and the East Indies.

1. **Eriodendron æsculifolium,** H. B. K. Nov. Gen. et Sp. v. p. 298; DC. Calques des Dess. Fl. Mex. 94.

SOUTH MEXICO, on the sea-coast, Campeche (*Humboldt & Bonpland*).

2. **Eriodendron occidentale,** Tr. et Pl. Prodr. Fl. N. Gran. i. p. 194.

Eriodendron anfractuosum β. caribæum, Seem.
Eriodendron anfractuosum, Cav. Diss. t. 151; Jacq. Amer. t. 182.

SOUTH MEXICO, near Tantoyuca (*Ervendberg*, 361), Acapulco (*Hinds*); PANAMA, David, Veraguas (*Seemann*).—COLOMBIA. Hb. Kew.

Many botanists regard this as being the same as the Old-World species.

27. MONTEZUMA.

Montezuma, DC. Prodr. i. p. 477; Benth. et Hook. Gen. Plant. i. p. 212.

Only the following arborescent species, described from Moçino's drawing.

1. **Montezuma speciosissima,** DC. Prodr. i. p. 477; Calques des Dess. Fl. Mex. i.

MEXICO, without locality (*Moçino*).

28. OCHROMA.

Ochroma, Sw. Prodr. p. 97; Benth. et Hook. Gen. Plant. i. p. 212.

The genus is limited to the following arboreous species:—

1. **Ochroma lagopus,** Sw. Fl. Ind. Occ. ii. p. 1144, t. 23.

Bombax pyramidale, Cav. Diss. v. t. 153.

MEXICO, according to DC. Prodr.; PANAMA, common in the forests of the Isthmus.—Also in the WEST INDIES, from TRINIDAD to CUBA, and in VENEZUELA.

29. CHORISIA.

Chorisia, H. B. K. Nov. Gen. et Sp. v. p. 295, t. 485; Benth. et Hook. Gen. Plant. i. p. 210.

Three arboreous species, restricted to Tropical America.

1. **Chorisia rosea,** Seem. Bot. Voy. 'Herald,' p. 84.
PANAMA, Boquete, Veraguas (*Seemann*, 1630). Hb. Kew.

30. HAMPEA. [vide Thespesia]

Hampea, Schl. in Linnæa, xi. p. 371; Benth. et Hook. Gen. Plant. i. p. 211.

Small trees, two or three species, one of which is a native of Colombia.

1. **Hampea integerrima,** Schl. in Linnæa, xi. p. 372.
SOUTH MEXICO, Jalapa (*Galeotti*, 4084; *Botteri*; *Hahn*), near Josocola and Hacienda de la Laguna (*Schiede*). Hb. Kew.

31. CAVANILLESIA.

Cavanillesia, Ruiz et Pav. Prodr. p. 97, t. 20; Benth. et Hook. Gen. Plant. i. p. 211.

Two or three species of large trees, restricted to Tropical America.

1. **Cavanillesia platanifolia,** H. B. K. Nov. Gen. et Sp. v. p. 306.
Pourretia platanifolia, Humb. et Bonpl. Pl. Æquin. ii. p. 162, t. 133.
PANAMA, Paraiso and Empire railway-stations (*S. Hayes*, 23).—COLOMBIA. Hb. Kew.

Order XXV. STERCULIACEÆ.

Sterculiaceæ, Benth. et Hook. Gen. Plant. i. p. 214.

Herbs, shrubs, or trees, about 350 species, belonging to about forty-five genera, natives of tropical countries mostly, and of subtropical Australia and South Africa.

Tribe STERCULIEÆ.

The members of this tribe are dispersed all round the tropical zone.

1. STERCULIA.

Sterculia, Linn. Gen. Plant. n. 1086; Benth. et Hook. Gen. Plant. i. p. 217.

Trees, upwards of fifty species, represented in all tropical countries, but most numerous in Asia.

1. **Sterculia acerifolia,** Presl, Reliq. Hænk. ii. p. 141 (sub *Chichæa*).
SOUTH MEXICO, west side (*Hænke*).

2. **Sterculia carthagenensis,** Cav. Diss. vi. p. 353; R. Br. in Benn. Pl. Jav. Rar. p. 228.
Sterculia chica, St.-Hil. Pl. Us. Bras. Merid. t. 46.
SOUTH MEXICO, Yucatan and Tabasco (*Johnson*); PANAMA (*Seemann*, 1232; *S. Hayes*). —COLOMBIA, GUIANA, BRAZIL.—Naturalized in the WEST INDIES. Hb. Kew.

3. **Sterculia mexicana,** R. Br. in Horsf. Pl. Jav. Rar. p. 227.

South Mexico, Tabasco (*Linden*). Hb. Kew.

4. **Sterculia oblongifolia,** DC. Prodr. i. p. 482; Calques des Dess. Fl. Mex. 106.

New Spain (*Sessé*).

5. **Sterculia punctata,** DC. Prodr. i. p. 483; Calques des Dess. Fl. Mex. 107.

New Spain (*Sessé*).

Tribe HELICTEREÆ.

2. MYRODIA.

Myrodia, Swartz, Prodr. p. 102 (*Lexarza,* La Llave); Benth. et Hook. Gen. Plant. i. p. 219.

About eight arboreous and shrubby species, limited to Tropical America.

1. **Myrodia funebris,** Benth. in Journ. Linn. Soc. vi. p. 115.

Lexarza funebris, La Llave.

South Mexico, Oaxaca (*Andrieux*, 512), Papantla (*Liebmann*); San Salvador, near Sonsonate (*S. Hayes*). Hb. Kew.

2. **Myrodia turbinata,** Sw. Fl. Ind. Occ. ii. p. 1227.

Mexico (*Sessé*), without locality.—Also in the West Indies.

3. **Myrodia verticillaris,** DC. Prodr. i. p. 477; Calques des Dess. Fl. Mex. 99.

Mexico (*Sessé*).

3. QUARARIBEA.

Quararibea, Aubl. Pl. Guian. p. 691, t. 278; Benth. et Hook. Gen. Plant. i. p. 212.

Two arboreous species, the present and *Q. guianensis* (a native of Guiana and Brazil).

1. **Quararibea pterocalyx,** Hemsley, Diag. Pl. Nov. i. p. 4. (Tab. X.)

Ramis puberulis, foliis amplis petiolatis oblongo-lanceolatis ovato-ellipticisve, floribus magnis breviter pedunculatis oppositifoliis, calyce tubuloso persistente anguste decemalato apice irregulariter trilobo.

Arbor parva, ramosa, ramis teretibus cano puberulis. *Folia* petiolata, coriacea, oblongo-lanceolata usque ovato-elliptica, 6–9 poll. longa (forsan interdum ultra), $2\frac{1}{2}$–4 poll. lata, obtusa vel subacuta, basi rotundata, parum inæqualia, integerrima, supra glabra, lucida, subtus dense flavo puberula, costa venisque elevatis, petiolo tereti sæpe medio leviter geniculato-curvato, 7–10 lin. longo. *Flores* fulvo-furfuracei, solitarii, oppositifolii, fere sessiles, 3–4 poll. longi, basi bibracteolati, bracteis parvis; calyx persistens indurescens, tubulosus, sesquipollicaris, longitudinaliter decemalatus, apice irregulariter 3-lobus (forsan etiam interdum 5-lobus); petala 5, linearia, apice rotundata, utrinque furfuracea, 3–4-pollicaria; columna staminea indivisa, robusta, furfuracea, apice antherifera, antheris bilocularibus vel inferioribus interdum unilocularibus, loculis parallelis vel discretis; ovarium 2-loculare, loculis 2-ovulatis?, stylo columnæ æquilongo. *Fructus* (maturus non visus) bilocularis, dispermus, calycis tubo indurato inclusus.

Panama, in swampy ground near Frijoli railway-station (*S. Hayes*, 137). Hb. Kew.

Planchon and Triana (Prodr. Fl. Nov. Gran. i. p. 195) unite *Quararibea* with *Myrodia*; but there are characters by which these two genera may be distinguished, though they are closely allied. The species here described and figured certainly has 2-celled anthers; therefore it is placed next to *Myrodia*, in this family, instead of leaving it in the Malvaceæ.

EXPLANATION OF TAB. X.

A flowering branch, natural size; and a vertical section of a flower.

4. BERNOULLIA.

Bernoullia, Oliv. in Hook. Ic. Pl. t. 1169, 1170.

A remarkable new genus of one arboreous species, apparently restricted to Guatemala.

1. **Bernoullia flammea**, Oliv. in Hook. Ic. Pl. tt. 1169, 1170.

GUATEMALA, Costa Grande, Ixtacapa (*Bernoulli*). Hb. Kew.

5. HELICTERES.

Helicteres, Linn. Gen. Plant. n. 1025; Benth. et Hook. Gen. Plant. i. p. 220.

Trees and shrubs, inhabiting the warmer regions of both hemispheres, but finding their maximum concentration in America.

1. **Helicteres baruensis**, Linn. Mant. p. 122; Jacq. Pl. Am. 149.

Helicteres altheæfolia, Benth. Bot. Voy. Sulph. p. 70, nec Lamk.

SOUTH MEXICO, between Tlacolola and San Bartolo, Oaxaca (*Andrieux*, 511); PANAMA (*Seemann*).—WEST INDIES, GUIANA, COLOMBIA. Hb. Kew.

2. **Helicteres guazumæfolia**, H. B. K. Nov. Gen. et Sp. v. p. 304.

Helicteres mexicana, H. B. K.

Helicteres carpinifolia, Presl.

SOUTH MEXICO, Vera Cruz (*Galeotti*, 4099), between Sepillo and Estero (*Schiede*); GUATEMALA, without locality (*Skinner*); PANAMA, island of Taboga (*Sinclair*).—Tropical SOUTH AMERICA. Hb. Kew.

3. **Helicteres jamaicensis**, Jacq. Am. p. 235, t. 179. fig. 99.

Helicteres altheæfolia, Lam.

PANAMA (*Seemann*).—Also in some of the West-Indian Islands, as JAMAICA and HAITI. Hb. Kew.

4. **Helicteres mollis**, Presl, Reliq. Hænk. ii. p. 139.

SOUTH MEXICO, west side (*Hænke*).

5. **Helicteres**, sp. (An *H. guazumæfolia*, H. B. K.?)

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1487); PANAMA (*Seemann*, *Hinds*, *S. Hayes*). Hb. Kew.

Tribe FREMONTIEÆ.

Limited to this genus and the monotypic *Fremontia*, which is endemic in California.

6. CHEIROSTEMON.

Cheirostemon, Humb. et Bonpl. Pl. Æquin. i. p. 81, t. 24; Benth. et Hook. Gen. Plant. i. pp. 212, 983.

The genus is limited to the following species, a celebrated tree;—

1. **Cheirostemon platanoides**, Humboldt et Bonpl. Pl. Æquin. i. p. 82, t. 24; Bot. Mag. t. 5135.

South Mexico, near Toluca, 8250 feet (*Humboldt & Bonpland*), calcareous mountains near the Pacific Ocean, 7000 feet (*Galeotti*, 4106), Mexico (*Tate*, *Andrieux*, 513, *&c.*); Guatemala, Volcan de Fuego, 8000 to 10,000 feet, Volcan de Agua (*Hartweg*, 573; *Salvin & Godman*), ridge above Cubulco and Altos of Guatemala near Los Encuentros, 7000 to 8000 feet (*Salvin & Godman*). Hb. Kew.

Tribe DOMBEYEÆ.

Dispersed throughout the tropics.

7. MELHANIA.

Melhania, Forsk. Fl. Æg.-Arab. p. 64; Benth. et Hook. Gen. Plant. i. p. 222.

Herbs or shrubs, about sixteen species natives of Subtropical and Tropical Africa, Asia, and Australia, and the one American species.

1. **Melhania ovata**, Webb, Spicil. Gorgon. in Hook. Niger Flora, p. 111.

Pentapetes ovata, DC. Prodr. i. p. 498.
Brotera ovata, Cav. Ic. v. pp. 19, 433.

South Mexico, near Huanujuato (*Cavanilles*).

Cavanilles first published this plant (*l. c.*), stating that it was raised in the Madrid garden from Mexican seeds; probably this was a mistake. Masters (Oliver's 'Flora Tropical Africa,' i. p. 231) refers Cavanilles's figure to *Melhania abyssinica*, without any explanation whatever. Bentham and Hooker (*l. c.*) quote Cavanilles, but make no mention of a Mexican or American species. Certainly a cultivated specimen in Hb. Kew., bearing the name *Brotera alba*, appears to be identical with undoubted *M. abyssinica*, which is a native of Scinde, Abyssinia, and the Cape-Verd Islands.

Tribe HERMANNIEÆ.

8. HERMANNIA.

Hermannia, Linn. Gen. Plant. n. 828; Benth. et Hook. Gen. Plant. i. p. 223.

A genus of about eighty herbaceous and shrubby species, whereof three are natives of Texas, four of Tropical Africa and Arabia, and the rest of Extratropical South Africa.

1. **Hermannia texana,** A. Gray, Gen. Ill. ii. p. 88, t. 135.
TEXAS.—NORTH MEXICO (*Gregg*).

9. PHYSODIUM.

Physodium, Presl, Reliq. Hænk. ii. p. 150; Benth. et Hook. Gen. Plant. i. p. 223.

The genus consists of the two following shrubby species.

1. **Physodium corymbosum,** Presl, Reliq. Hænk. ii. p. 150, t. 72.
SOUTH MEXICO, St. Blas to Guadalaxara (*Coulter*, 788), west coast (*Hænke*). Hb. Kew.

2. **Physodium dubium,** Hemsley, Diag. Pl. Nov. i. p. 4.

Fulvo tomentosum, foliis longe petiolatis ovato-rotundatis acuminatis denticulatis, floribus cymosis, calyce campanulato 5-dentato, petalis obovatis, filamentis fere ad apicem connatis, antheris 5 cum staminodiis dentiformibus alternantibus, ovario villoso.

Frutex, (?) ramis teretibus, novellis dense fulvo tomentosis. *Folia* longe petiolata, distantia, molliter tomentosa, ovato-rotundata, bipollicaria, acuminata, denticulata, 3–5-nervia, petiolo 6–12 lin. longo, stipulis subulatis mox deciduis. *Flores* in cymas densas terminales dispositi; calycis tubus angulatus, ad 3 lin. longus, lobis brevibus triangulari-subulatis; petala obovata, deorsum valde attenuata, calyce fere duplo longiora; stamina 5, inclusa, filamentis fere ad apicem monadelphis, antheris staminodiis dentiformibus alternantibus; ovarium stipitatum, villosum, 5-loculare, stylis liberis, stigmatibus clavatis. *Fructus* ignotus.

SOUTH MEXICO, between Acatlan and Chila, Puebla (*Andrieux*, 507). Hb. Kew.

Physodium does not appear to differ generically from *Melochia*; but I have followed Bentham and Hooker in referring this plant to Presl's genus.

10. MELOCHIA.

Melochia, Linn. Gen. Plant. n. 829; Benth. et Hook. Gen. Plant. i. p. 223.

Herbs or shrubs, or rarely arboreous. About fifty species are known; and they are spread over nearly all tropical and subtropical regions. Some of the following names probably belong to the same species.

1. **Melochia corymbosa,** DC. Prodr. i. p. 491 (sub *Riedleia*).
SOUTH MEXICO (*Sessé*).

2. **Melochia hirsuta,** Cav. Diss. vi. p. 323, t. 175. fig. 1.
Riedleia serrata, Vent. Choix, t. 37.
Riedleia heterotricha, Turcz.

SOUTH MEXICO, Jalapa (*Galeotti*, 4081; *Coulter*, 793); NICARAGUA (*Tate*); PANAMA (*Seemann*, *Halsted*, *S. Hayes*).—Widely dispersed in Tropical SOUTH AMERICA and the WEST INDIES. Hb. Kew.

3. **Melochia inflata,** Benth. Bot. Voy. Sulph. p. 71.

Mougeotia inflata, H. B. K. Nov. Gen. et Sp. v. t. 484.

PANAMA, Veraguas (*Seemann*).—This species has a wide range in Tropical SOUTH AMERICA, and it is also found in JAMAICA. Hb. Kew.

4. **Melochia interrupta,** Schl. in Linnæa, xi. p. 375 (sub *Riedleia*).

SOUTH MEXICO, Hacienda de la Laguna (*Schiede*).

5. **Melochia jurgensenii,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 211 (sub *Riedleia*).

MEXICO (*Jurgensen*, 751).

6. **Melochia melissæfolia,** Benth. in Hook. Journ. Bot. iv. p. 127.

PANAMA (*Fendler*, 17).—Tropical SOUTH AMERICA, WEST INDIES. Also in Western Tropical AFRICA. Hb. Kew.

7. **Melochia nodiflora,** Sw. Fl. Ind. Occ. ii. p. 1139.

Riedleia urticæfolia, Turcz.

SOUTH MEXICO, Acapulco (*Sinclair*), Oaxaca (*Galeotti*, 4091); NICARAGUA, Gulf of Fonseca (*Sinclair*); PANAMA (*Seemann, S. Hayes*).—WEST INDIES, COLOMBIA. Hb. Kew.

8. **Melochia parvifolia,** H. B. K. Nov. Gen. et Sp. v. p. 325.

SOUTH MEXICO, Tepic (*Lay*).

Originally described from specimens collected near Caracas.

9. **Melochia pyramidata,** Linn. Syst. p. 510.

Melochia domingensis, Jacq. Hort. Vindb. i. t. 30.

NORTH MEXICO (Mex. Bound. Survey, 118); SOUTH MEXICO, Zimapan (*Coulter*, 794), Acapulco (*Sinclair*), Cordova (*Bourgeau*, 1739); GUATEMALA (*Friederichsthal*).—Nearly all over TROPICAL AMERICA and the WEST INDIES. This species also occurs in Tropical AUSTRALIA, EAST AFRICA, MAURITIUS, and some of the PACIFIC ISLANDS. Hb. Kew.

10. **Melochia plicata,** Presl, Reliq. Hænk. ii. p. 145.

SOUTH MEXICO, Acapulco (*Hænke*).

11. **Melochia serrata,** Benth. Bot. Voy. Sulph. p. 71.

Riedleia serrata, Vent. Choix, t. 37; ?=*hirsuta*.

SOUTH MEXICO, Jalapa (*Coulter*, 793; *Galeotti*, 4081); NICARAGUA (*Tate*); PANAMA (*Seemann, S. Hayes*).—Widely dispersed in Tropical SOUTH AMERICA and the WEST INDIES. Hb. Kew.

12. **Melochia scutellarioides,** Turcz. in Bull. Soc. Nat. Mosc. 1858, ii. p. 10 (sub *Riedleia*).

MEXICO (*Linden*, 835).

13. **Melochia tenella,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 212 (sub *Riedleia*). Mexico (*Jurgensen*, 506).

14. **Melochia tomentella,** Presl, Reliq. Hænk. ii. p. 148 (sub *Riedleia*).
South Mexico, Acapulco (*Hænke*).

15. **Melochia tomentosa,** Linn. Sp. Pl. p. 932.
North Mexico, Sonora Alta (*Coulter*, 797); South Mexico, Acapulco (*Barclay*), Oaxaca (*Andrieux*, 506), Jalapa (*Galeotti*).—Nearly all over Tropical South America and the West Indies. Hb. Kew.

16. **Melochia,** sp. (affinis *M. concinnæ*, Miq.).
Panama, Empire railway-station (*S. Hayes*). Hb. Kew.

11. WALTHERIA.

Waltheria, Linn. Gen. Plant. n. 827; Benth. et Hook. Gen. Plant. i. p. 224.

Herbs, shrubs, or rarely arboreous. About sixteen species, of which one is very widely dispersed in tropical and subtropical countries, two are African, two are natives of Oceania, and the rest American.

1. **Waltheria americana,** Linn. Sp. Pl. p. 941.
Waltheria indica, Linn. Cav. Diss. vi. t. 170.
Found in nearly all the Tropical and Subtropical regions throughout the world, and common from Panama to North Mexico.

2. **Waltheria brevipes,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 213.
South Mexico, San Pedro Nolasco &c. (*Jurgensen*, 121, in part).

3. **Waltheria detonsa,** A. Gray, Pl. Wright. ii. p. 24.
North Mexico, Magdalena, Sonora (*Thurber*), rocky hills on the Sonoita, near Rancho Desierto (*Wright*).

4. **Waltheria glomerata,** Presl, Reliq. Hænk. ii. p. 152.
South Mexico, Guichilona, between Tehuantepec and the river Guazacualco (*Andrieux*, 510); Panama (*Hænke*, *Seemann*, *S. Hayes*). Hb. Kew.

5. **Waltheria hirsuta,** Presl, Reliq. Hænk. ii. p. 152.
South Mexico, west side (*Hænke*).

6. **Waltheria preslii,** Walp. Rep. i. p. 340.
Waltheria rotundifolia, Presl, nec Zucc.
South Mexico, Acapulco (*Hænke*), Oaxaca (*Galeotti*, 4093). Hb. Kew.

Tribe BUETTNERIEÆ.

12. THEOBROMA.

Theobroma, Linn. Gen. Plant. i. n. 900; Benth. et Hook. Gen. Plant. i. p. 225.

The genus is endemic in America, and comprises about eighteen species; see Bernoulli, "Uebersicht der bis jetzt bekannten Arten von *Theobroma*," with seven plates.

1. **Theobroma angustifolia,** DC. Prod. i. p. 484; Calques des Dess. Fl. Mex. 112.
SOUTH MEXICO, without locality (*Sessé*); COSTA RICA, without locality (*Hoffmann*). Hb. Berol.

2. **Theobroma bicolor,** Humb. et Bonpl. Pl. Æquin. i. p. 104, t. 30.
SOUTH MEXICO, Chiapas (*Linden*); GUATEMALA, Mazatenango (*Bernoulli*, 94), cultivated.—A native of COLOMBIA, GUIANA, NORTH BRAZIL, and possibly also of GUATEMALA. Hb. Kew.

3. **Theobroma cacao,** Linn. Sp. Pl. p. 1100.
Cacao sativa, Lamk. Ill. t. 653.
PANAMA (*Seemann*), cultivated; NICARAGUA (*Levy*), cultivated? Hb. Kew.
"Cultivated and wild throughout Tropical America."—*Bernoulli, loc. cit.*

4. **Theobroma ovatifolia,** DC. Prodr. i. p. 485; Calques des Dess. Fl. Mex. 113.
MEXICO.

13. HERRANIA.

Herrania, Goud. Ann. Sc. Nat. série 3, ii. p. 230; Benth. et Hook. Gen. Plant. i. p. 225.

Three or four arboreous species, confined to the warmer parts of America.

1. **Herrania albiflora,** Goud. Ann. Sc. Nat. série 3, ii. p. 230, t. 5.
PANAMA (*S. Hayes,* sketch of fruit from Hb. Hanbury).—COLOMBIA. Hb. Kew.

14. GUAZUMA.

Guazuma, Plum. in Juss. Gen. Plant. p. 276 (*Bubroma,* Schreb.; *Diuroglossum,* Turcz.); Benth. et Hook. Gen. Plant. i. p. 225.

Trees, about half a dozen species, one of which is now widely dispersed in tropical countries, having been introduced from America; one is recorded as a native of Java, and the rest are American.

1. **Guazuma polybotrya,** Cav. Ic. iii. p. 51, t. 299.
SOUTH MEXICO, Acapulco and Tepic (*Lay & Collie*); "NEW SPAIN" (*Cavanilles*).

2. **Guazuma tomentosa,** H. B. K. Nov. Gen. et Sp. v. p. 320.
TEXAS.—SOUTH MEXICO, between Chalco and Gonacatepec (*Andrieux*, 505), Yucatan

and Tabasco (*Johnson*); GUATEMALA (*Bernoulli*, *Friedrichsthal*); NICARAGUA (*Levy*, 17).—COLOMBIA, PERU, GUIANA, TRINIDAD. Also in the EAST INDIES and JAVA. Hb. Kew.

3. **Guazuma ulmifolia,** Lamk. Dict. iii. p. 52; A. St.-Hil. Pl. Us. Bras. t. 47.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1278 and 1462), Vera Cruz (*Galeotti*, 7103).—Widely dispersed in TROPICAL AMERICA and the WEST INDIES. Hb. Kew.

15. AYENIA.

Ayenia, Linn. Gen. Plant. n. 1020 (*Cybiostigma,* Turcz.); Benth. et Hook. Gen. Plant. i. p. 225.

Herbs or shrubs, about ten or twelve species, confined to America.

1. **Ayenia cordifolia,** DC. Prodr. i. p. 488; Calques des Dess. Fl. Mex. 105.
MEXICO, in the mountains (*Moçino & Sessé*).
This is probably the same as *A. magna.*

2. **Ayenia magna,** Linn. Sp. Pl. p. 1354.
Cybiostigma abutilifolium, Turcz.
SOUTH MEXICO, Mirador, Vera Cruz (*Linden*, 27), Yucatan (*Linden*, 848).—WEST INDIES, COLOMBIA. Hb. Kew.

3. **Ayenia microphylla,** A. Gray, Pl. Wright. in Sm. Contrib. v. p. 24.
TEXAS, NEW MEXICO to—SOUTH MEXICO, Oaxaca (*Galeotti*, 7168). Hb. Kew.

4. **Ayenia ovata,** Hemsley, Diag. Pl. Nov. pars 1, p. 4. (Tab. XI. figg. 1–4.)

Frutescens, cano vel fulvo tomentosa, foliis petiolatis ovatis cuspidulato-dentatis subtus velutinis, floribus subumbellatis, umbellis axillaribus pedunculatis 3–5-floris, petalis longe graciliterque unguiculatis, limbo basi cordato, ovario villoso longe stipitato.

Frutex, ramis teretibus gracilibus, novellis cinereo vel flavo tomentosis. *Folia* petiolata, ovata vel ovato-lanceolata, 1–2-pollicaria, acuta vel obtusa, basi rotundata vel leviter cordata, regulariter cuspidulato-dentata, supra brevissime pubescentia, infra velutina, venis prominentibus, petiolo 4–6 lin. longo, stipulis lineari-subulatis deciduis. *Flores* majusculi, subumbellati, singulariter evoluti, pedunculis gracilibus 3–12 lin. longis, pedicellis 3–6 lin. longis; sepala 5, membranacea, ovato-lanceolata, acuta, 3–4 lin. longa, extus villosa, intus glabra colorata; petala 5, longe unguiculata, unguiculis filiformibus, laminis basi cordatis, apice urceolo stamineo adnatis; stamina 3, antheris 3-locularibus; ovarium stipitatum, villosum, stylo brevi, stigmate capitato. *Fructus* non visus.

SOUTH MEXICO, Zimapan (*Coulter*, 1515). Hb. Kew.

EXPLANATION OF TAB. XI. FIGG. 1–4.

Fig. 1, a flower, enlarged; 2, staminal tube cut open and showing the attachment to the tips of the petals; 3, blade of petal with one of the 3-celled anthers attached to its under surface; 4, section of an ovary.

This has been confounded with *A. magna,* which appears to have received its name in contrast to *A. pusilla*; but our plant has larger and fewer flowers, and a decidedly

stipitate ovary. There is a cultivated specimen in Kew herbarium exactly like Coulter's.

5. **Ayenia pusilla,** Linn. Sp. Pl. p. 1354; Cav. Diss. v. t. 147.

Texas and New Mexico to—North Mexico, Chiricahui mountains, Sonora (*Wright*). —Also in South America from Colombia to Peru and Uruguay, and in the West Indies. Hb. Kew.

6. **Ayenia rotundifolia,** Hemsley, Diag. Pl. Nov. pars 1, p. 4. (Tab. XI. figg. 2 et 5–8.)

Frutescens, ramis glabrescentibus, foliis longe petiolatis ovato-rotundatis crenatis utrinque molliter pubescentibus, floribus axillaribus solitariis vel pedunculis 2–3-floris, petalis longe graciliterque unguiculatis, limbo basi sagittato, ovario longe stipitato.

Frutex, ramis teretibus gracilibus elongatis, novellis dense breviterque cinereo pubescentibus. *Folia* longe petiolata, velutino-pubescentia, ovata, rotundata vel cordata, 6–12 lin. lata, crenulato-dentata, apice obtusa vel retusa, petiolo gracili 4–7 lin. longo, stipulis parvis linearibus. *Flores* in axillis foliorum solitarii vel pedunculis 2–3-floris, pedicellis gracilibus basi bracteolatis; sepala 4 vel 5, membranacea, ovato-lanceolata, ad 2 lin. longa, extus stellato-pubescentia, intus colorata; petala 4 vel 5, tenuiter unguiculata, ad 4 lin. longa, lamina subquadrata eglandulosa angulis inferioribus breviter caudatis; stamina 3, filamentorum tubo 1½ lin. longo, antheris 3-locularibus; ovarium stipitatum, pubescens, 3-loculare (?), stylo brevi, stigmate capitato. *Fructus* mihi ignotus.

South Mexico, Zimapan (*Coulter*, 1514). Hb. Kew.

Allied to *A. microphylla*, but differing materially in the distinctly stipitate ovary &c.

EXPLANATION OF TAB. XI. Figg. 2 et 5–8.

Fig. 2, portion of a plant, nat. size; 5, a flower, enlarged; 6, staminal tube cut open and showing attachment to the petals; 7, limb of a petal with one of the 3-celled anthers attached to the under surface; 8, section of the ovary.

7. **Ayenia sidæfolia,** Hemsl.

Cybiostigma sidæfolium, Turcz. in Bull. Soc. Nat. Mosc. 1852, ii. p. 156.

South Mexico, Oaxaca, Pacific coast (*Galeotti*, 326), without locality (*Bates*). Hb. Kew.

8. **Ayenia,** sp.

South Mexico, around Toluca in the province of Mexico (*Andrieux*, 504). Hb. Kew.

16. BUETTNERIA.

Buettneria, Linn. Gen. Plant. n. 268; Benth. et Hook. Gen. Plant. i. p. 225.

About fifty species, whereof ten are found in the tropics of the Old World, and the rest in America.

1. **Buettneria carthagenensis,** Jacq. Amer. p. 41.
PANAMA (*Seemann*).
This is perhaps the same as *B. lanceolata*, DC.

2. **Buettneria lanceolata,** DC. Prod. i. p. 487; Calques des Dess. Fl. Mex. 103.
SOUTH MEXICO, Jalapa (*Galeotti*, 7054 and 7143), Vera Cruz (*Linden*, 8); GUATEMALA (*Bernoulli, Sinclair*); PANAMA, Empire railway-station (*S. Hayes*, 246).—And TROPICAL parts of SOUTH AMERICA. Hb. Kew.

3. **Buettneria lateralis,** Presl, Reliq. Hænk. ii. p. 144.
SOUTH MEXICO, west side (*Hænke*).

4. **Buettneria rubicaulis,** Presl, Reliq. Hænk. ii. p. 145.
SOUTH MEXICO, west side (*Hænke*).

5. **Buettneria salicifolia,** Presl, Reliq. Hænk. ii. p. 144.
SOUTH MEXICO, west side (*Hænke*).

6. **Buettneria tiliæfolia,** Presl, Reliq. Hænk. ii. p. 144.
SOUTH MEXICO, west side (*Hænke*).

7. **Buettneria,** sp. n.? (*B. catalpæfoliæ* aff.)
SOUTH MEXICO, woods on the Pacific coast of Oaxaca (*Galeotti*, 7139). Hb. Kew.

8. **Buettneria,** sp.
SOUTH MEXICO, between Tlacolola and Totolapa, Oaxaca (*Andrieux*, 503). Hb. Kew.

Order XXVI. TILIACEÆ.

Tiliaceæ, Benth. et Hook. Gen. Plant. i. p. 228.

Trees or shrubs, rarely herbaceous. About 350 species, belonging to forty-five genera, distributed over all parts of the world except the frigid regions.

Tribe GREWIEÆ.

1. BELOTIA.

Belotia, A. Rich. Fl. Cub. i. p. 20; Benth. et Hook. Gen. Plant. i. p. 233.

Hooker and Bentham (*l. c.*) regard all the forms (except, perhaps, *B. insignis*, subsequently published) as varieties of one arboreous species.

1. **Belotia grewiæfolia,** A. Rich. Fl. Cub. i. p. 207, t. 21.
Grewia mexicana, DC.
Adenodiscus mexicanus, Turcz.
SOUTH MEXICO, without localities (*Harris, Jurgensen*, 772).—WEST INDIES. Hb. Kew.

2. **Belotia galeottii,** Turcz. in Bull. Soc. Nat. Mosc. xix. p. 504.

South Mexico, Montecinos, Vera Cruz (*Linden*, 43), Jalapa (*Galeotti*); Nicaragua, Chontales (*Seemann*, 12). Hb. Kew.

3. **Belotia insignis,** Baill. Adans. x. p. 182.

Mexico (*Ghiesbreght*, 356). Hb. Paris.

4. **Belotia,** sp.

Panama, Paraiso railway-station (*S. Hayes*, 438). Hb. Kew.

This is probably *B. grewiæfolia*, to which also, perhaps, *B. galeottii* will have to be referred.

2. TRIUMFETTA.

Triumfetta, Linn. Gen. Plant. n. 600; Benth. et Hook. Gen. Plant. i. p. 234.

Herbs, undershrubs, or shrubs. About forty or fifty species, dispersed in the tropics of both hemispheres, some having a wide range. Several of the following names will doubtless prove to be synonyms of others.

1. **Triumfetta althæoides,** Lam. Dict. iii. p. 420.

South Mexico, Yucatan and Tabasco (*Johnson*, 58), without locality (*Aschenborn*).—Common in Tropical South America and the West Indies. Hb. Kew.

2. **Triumfetta botteriana,** Turcz. in Bull. Soc. Nat. Mosc. 1859, i. p. 260.

South Mexico, Orizaba (*Botteri*, 773). Hb. Kew.

3. **Triumfetta bogotensis,** DC. Prodr. i. p. 506.

Triumfetta pilosa, H. B. K.

Var. *α.* **genuina,** Pl. et Tr. Prodr. Fl. N. Granatensis, i. p. 224.

Panama (*Duchassaing*).

Var. *β.* **grandiflora,** Pl. et Tr. Prodr. Fl. N. Granatensis, i. p. 224.

Triumfetta dumetorum, Schl. in Linnæa, xi. p. 377.

South Mexico, in thickets about Jalapa (*Schiede*), Tlalpujahua (*Keerl*).—Colombia. Hb. Kew.

4. **Triumfetta brachypetala,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 227.

South Mexico, without locality (*Linden*, 97).

5. **Triumfetta galeottiana,** Turcz. in Bull. Soc. Nat. Mosc. 1859, i. p. 260.

South Mexico, Jalapa (*Galeotti*, 4153), region of Orizaba (*Bourgeau*, 2897; *Botteri*, 765), Mirador, Vera Cruz (*Linden*, 47). Hb. Kew.

6. **Triumfetta heterophylla,** Lam. Dict. iii. p. 420.

Nicaragua, Gulf of Fonseca (*Sinclair*).—Colombia, Guiana, West Indies. Hb. Kew.

7. **Triumfetta hispida,** A. Rich. Fl. Cub. i. p. 204.

Panama, West Indies.—(*Grisebach*, Fl. Brit. W. Indies).

8. **Triumfetta josefina,** Polakowsky in Linnæa, xli. p. 552.

Costa Rica, on the outskirts of gardens and in woods (*Polakowsky*).

9. **Triumfetta lindeniana,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 229.

South Mexico, Jalapa, 4000 feet (*Linden*, 59).

10. **Triumfetta lappula,** Linn. Sp. Pl. p. 637; Plum. ed. Burm. t. 255.

South Mexico, Guadalajara (*Galeotti*, 4150); Nicaragua, Chontales (*Tate*), Gulf of Fonseca (*Sinclair*); Panama (*S. Hayes*).—A very common Tropical-American and West-Indian species. Hb. Kew.

11. **Triumfetta longicuspis,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 229.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 882, 960). Hb. Kew.

12. **Triumfetta mollissima,** H. B. K. Nov. Gen. et Sp. v. p. 345, t. 488.

South Mexico, near Los dos Puentes, Hacienda de la Laguna (*Schiede*).—Colombia.

13. **Triumfetta obovata,** Schl. et Ch. in Linnæa, v. p. 228.

South Mexico, Jalapa (*Galeotti*, 7062), Mirador, Vera Cruz (*Linden*, 26), Hacienda de la Laguna (*Schiede & Deppe*). Hb. Kew.

14. **Triumfetta orizabæ,** Turcz. in Bull. Soc. Nat. Mosc. 1859, i. p. 261.

South Mexico, Orizaba (*Botteri*, 771 and 772; *Bourgeau*, 2846). Hb. Kew.

15. **Triumfetta oxyphylla,** DC. Prodr. i. p. 508.

South Mexico, Chiapas (*Ghiesbreght*, 166 and 625). Hb. Kew.

16. **Triumfetta paniculata,** Hook. et Arn. Bot. Beech. Voy. p. 279.

South Mexico, Jalisco (*Lay & Collie*). Hb. Kew.

17. **Triumfetta polyandra,** DC. Prodr. i. p. 508.

Triumfetta grandiflora, Vahl.

? *Triumfetta longicuspis,* Turcz.

North Mexico, Sierra Madre (*Seemann*, 2147); South Mexico.—Peru, Montserrat and Dominica. Hb. Kew.

18. **Triumfetta semitriloba,** Linn., ex A. Rich. Fl. Cub. p. 80.

Triumfetta havanensis, H. B. K.

South Mexico, Jalapa (*Coulter*, 792); Guatemala, Volcan de Fuego (*Salvin*); Panama, Chagres (*Fendler*, 172), Isle of Taboga (*Seemann*, *S. Hayes*).—This has a wide range in Tropical America and the West Indies. Also common in the tropics of the Old World. Hb. Kew.

19. **Triumfetta speciosa,** Seem. Bot. Voy. 'Herald,' p. 86.

Triumfetta macrocalyx, Turcz.

South Mexico, Jalapa (*Galeotti*, 1973), without special locality (*Jurgensen*, 614); Guatemala, Chilasco (*Salvin & Godman*); Panama, Boquete, Veraguas (*Seemann*, 1240). Hb. Kew.

20. **Triumfetta,** sp. (*T. bogotensi* aff.)
SOUTH MEXICO, valley of Cordova (*Bourgeau*); GUATEMALA, Dueñas (*Salvin & Godman*). Hb. Kew.

21. **Triumfetta,** sp.
SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 148). Hb. Kew.

3. HELIOCARPUS.

Heliocarpus, Linn. Gen. Plant. n. 606; Benth. et Hook. Gen. Plant. i. p. 234.

A genus of about half a dozen species, restricted to Tropical America.

1. **Heliocarpus americanus,** Linn. Sp. Pl. p. 643; Hort. Cliff. p. 211, t. 16.
SOUTH MEXICO, Zacuapan (*Linden*, 858), Orizaba (*Botteri*, 882), Vera Cruz (*Galeotti*, 4155); GUATEMALA, Volcan de Fuego (*Salvin*). Hb. Kew.

2. **Heliocarpus arborescens,** Seem. Bot. Voy. 'Herald,' p. 86.
NICARAGUA, Chontales (*Levy*); PANAMA, Veraguas (*Seemann*). Hb. Kew.

3. **Heliocarpus appendiculatus,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 226.
SOUTH MEXICO, Tabasco (*Linden*, 1605, 2065). Hb. Kew.

4. **Heliocarpus popayanensis,** H. B. K. Nov. Gen. et Sp. v. p. 341.
PANAMA (*S. Hayes*, 437), Island of Taboga (*Barclay*).—COLOMBIA. Hb. Kew.

5. **Heliocarpus tomentosus,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 226.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1574 and 1815), Mirador (*Linden*, 85), Oaxaca (*Galeotti*, 4162). Hb. Kew.

6. **Heliocarpus,** sp.
NICARAGUA, Chontales (*Tate*, 384). Hb. Kew.

7. **Heliocarpus,** sp.
SOUTH MEXICO, Barranca, near Cuernavaca (*Bourgeau*, 1200), without special habitat (*Bates*). Hb. Kew.

Tribe TILIEÆ.

4. CORCHORUS.

Corchorus, Linn. Gen. Plant. n. 675; Benth. et Hook. Gen. Plant. i. p. 235.

Herbs or shrubs. About thirty-five species, chiefly natives of the tropics of the Old World, some being amphigæous.

1. **Corchorus argutus,** H. B. K. Nov. Gen. et Sp. v. p. 337.
PANAMA (*Duchassaing*).—COLOMBIA.
Planchon and Triana (Prodr. Fl. Nov. Gran. i. p. 223) think this may be a variety of the next.

2. **Corchorus pilosus,** H. B. K. Nov. Gen. et Sp. v. p. 338, t. 487.
South Mexico, Hacienda de la Laguna (*Schiede*).—Colombia.

3. **Corchorus pilolobus,** Link, Enum. Hort. Berol. ii. p. 72. = *hirtus*
South Mexico, near Tantoyuca (*Ervendberg*, 196 and 197).
This is referred by some botanists to the next.

4. **Corchorus siliquosus,** Linn. Sp. Pl. p. 746.
Tropical and subtropical regions of America: common from Florida to—South Mexico, Yucatan and Tabasco (*Johnson*); Panama (*Seemann, Duchassaing*).—And from the West Indies to Peru and Brazil. Hb. Kew.

5. LUHEA.

Luhea, Willd. in Neue Schr. Ges. nat. Fr. Berl. iii. p. 409, t. 5; Benth. et Hook. Gen. Plant. i. p. 235.

Trees and shrubs. About sixteen species, endemic in America.

1. **Luhea platypetala,** A. Rich. Fl. Cub. i. p. 212, t. 23.
Luhea rufescens, Benth. nec St.-Hil.
Alegria candida, DC. Prodr. i. p. 517; Calques des Dess. Fl. Mex. 102.
South Mexico, Oaxaca (*Ghiesbreght*), Omealco (*Bourgeau*, 3113), Mexico (*Jurgensen*, 769); Nicaragua, Gulf of Fonseca (*Sinclair*); Panama (*Duchassaing, S. Hayes*).—And widely dispersed in Tropical South America. Hb. Kew.

2. **Luhea seemanni,** Pl. et Tr. Prodr. Fl. N. Gran. i. p. 220.
Luhea rufescens, Seem. nec St.-Hil.
Panama, forests in the south of Veraguas (*Seemann*). Hb. Kew.

3. **Luhea,** sp.
South Mexico, between Tlacolola and Tolotapa, Oaxaca (*Andrieux*, 502). Hb. Kew.

6. MUNTINGIA.

Muntingia, Linn. Gen. Plant. n. 651; Benth. et Hook. Gen. Plant. i. p. 236.

One species. A small tree, endemic in America.

1. **Muntingia calabura,** Linn. Sp. Pl. p. 728; Jacq. Am. p. 166, t. 107.
Common in Tropical America and the West Indies, including Panama, Nicaragua, Guatemala, and South Mexico. Hb. Kew.

7. TILIA.

Tilia, Linn. Gen. Plant. n. 660; Benth. et Hook. Gen. Plant. i. p. 236.

About twelve arboreous species, scattered in the temperate zone of the northern hemisphere.

1. **Tilia mexicana,** Benth. Pl. Hartw. p. 35, nec Schl.

South Mexico, Orizaba (*Botteri*, 988), Oaxaca (*Galeotti*, 4158), Zimapan (*Coulter*, 790), between Anganguio and San Andres (*Graham*), without locality (*Hartweg*). Hb. Kew.

2. **Tilia mexicana,** Schl. in Linnæa, xi. p. 377. =*T. americana*, Linn.?

South Mexico, Cuesta Grande de Chiconquiaco (*Schiede*).

[*Tilia heterophylla*, Vent. DC. Prodr. i. p. 513. DeCandolle says he has a Mexican specimen resembling this species, which is a native of North America; but there is, so far as we are aware, no record of its having been found south of North Carolina.]

Tribe APEIBEÆ.

8. APEIBA.

Apeiba, Aubl. Pl. Guian. i. p. 537, tt. 213–216 (*Aubletia,* Schreb.); Benth. et Hook. Gen. Plant. i. p. 237.

The genus is endemic in America, and consists of five or six arboreous and shrubby species.

1. **Apeiba tibourbou,** Aubl. Guian. i. p. 538, t. 213.

South Mexico, Guichilona, between Tehuantepec and the river Goazacualco (*Andrieux*, 501); Panama (*Fendler*, *S. Hayes*).—In nearly all Tropical parts of South America and the West Indies; but apparently not extending far southward on the western side of the continent. Hb. Kew.

Tribe PROCKIEÆ.

9. PROCKIA.

Prockia, Linn. Gen. Plant. n. 674; Benth. et Hook. Gen. Plant. i. p. 237 (*Kellettia,* Seem.).

An exclusively American genus, comprising two or three shrubby species.

1. **Prockia crucis,** Linn. Sp. Pl. p. 74; Vahl, Symb. iii. t. 64.

Kellettia odorata, Seem. Bot. Voy. 'Herald,' p. 85.

South Mexico, Vera Cruz (*Linden*, 669); Guatemala (*Bernoulli*, 309); Panama, La Mesa (*Seemann*).—West Indies, Brazil, &c. Hb. Kew.

2. **Prockia obovata,** Presl, Reliq. Hænk. ii. p. 94.

South Mexico, Acapulco (*Hænke*).

10. HASSELTIA.

Hasseltia, H. B. K. Nov. Gen. et Sp. vii. p. 231; Benth. et Hook. Gen. Plant. i. p. 238.

Consisting of about four arboreous species, confined to Tropical America.

1. **Hasseltia floribunda,** H. B. K. Nov. Gen. et Sp. vii. p. 232, t. 651.

NICARAGUA (*Tate*); PANAMA (*Seemann, S. Hayes*).—COLOMBIA, ECUADOR. Hb. Kew.

2. **Hasseltia pyramidalis,** Hemsley, Diag. Pl. Nov. i. p. 4.

Frutescens, foliis petiolatis glabris oblongo-lanceolatis acuminatis obtusis remotiuscule crenato-serratis, floribus albis racemoso-paniculatis, paniculis pyramidiformibus, filamentis crispis, stylo brevi trifido.

Frutex, ramis tenuibus teretibus, junioribus puberulis. *Folia* alterna, glabra, petiolata vix coriacea, subtrinervia, oblongo-lanceolata, 3–6-pollicaria, acuminata, obtusissima, basi cuneata, supra obscure biglandulosa, remotiuscule crenato-serrata, petiolo gracili, 3–12 lin. longo. *Flores* albi (*Linden*), pedicellati, racemoso-paniculati; paniculæ laxæ, terminales folia superantes; sepala 4 (vel interdum 5 ?), pubescentia, ovato-obtusa; petala 4 (vel interdum 5 ?), obovato-spatulata, pubescentia, sepalis æquilonga; stamina numerosissima, libera, petalis breviora, antheris parvis, filamentis filiformibus crispis; ovarium villosum, triloculare, multiovulatum (?); styli brevissimi, trifidi. *Fructus* ignotus.

SOUTH MEXICO, Chiapas, Zulusuchiapa (*Linden*, 1639); HONDURAS (*Armstrong*). Hb. Kew.

This differs from *H. floribunda* and *H. pubescens* (which is possibly only a hairy state of *H. floribunda*) in its shrubby habit, smaller and thinner leaves, loose pyramidal panicles (not dense corymbose flat-topped panicles), and in other characters, given above.

3. **Hasseltia,** sp.

NICARAGUA, without locality (*Tate*). Hb. Kew.

Tribe SLOANEÆ.

11. SLOANEA.

Sloanea, Linn. Gen. Plant. n. 655; Benth. et Hook. Gen. Plant. i. p. 238.

Trees, about thirty species, restricted to Tropical America.

1. **Sloanea quadrivalvis,** Seem. Bot. Voy. 'Herald,' p. 85, t. 15.

Dasycarpus quadrivalvis, Œrst.

NICARAGUA (*Œrsted*); PANAMA (*S. Hayes, Seemann*). Hb. Kew.

[*Lecostemon,* Moç. et Sessé, according to a pencil note in a copy of Bentham and Hooker's 'Genera Plantarum' (Bib. Kew.), is perhaps a *Sloanea.*]

Series II. DISCIFLORÆ.

Order XXVII. LINACEÆ.

Lineæ, Benth. et Hook. Gen. Plant. i. p. 241.

About 135 species, belonging to fourteen genera. The herbaceous species are mostly natives of the temperate regions of the northern hemisphere, and the shrubby and arboreous ones mainly of tropical countries.

Tribe LINEÆ.

1. LINUM.

Linum, Linn. Gen. Plant. n. 389; Benth. et Hook. Gen. Plant. i. p. 242.

About eighty herbaceous species, inhabiting both north and south temperate and subtropical regions; a few occurring in Tropical South America.

1. **Linum aristatum,** Engelm. in Bot. Wisliz. Rep. p. 101.

UTAH, COLORADA; NEW MEXICO.—NORTH MEXICO, between El Paso and Chihuahua (*Wright*). Hb. Kew.

2. **Linum berlandieri,** Hook. Bot. Mag. t. 3480.

CAROLINA, GEORGIA, TEXAS, NEW MEXICO.—NORTH MEXICO, Chihuahua (*Torrey*).

3. **Linum cruciatum,** Planch. in Hooker's Lond. Journ. Bot. vii. p. 499.

Linum schiedeanum, Hook. et Arn. nec Ch. et Schl.

NORTH MEXICO, Sierra Madre (*Seemann*).—SOUTH MEXICO, Tepic (*Barclay*); GUATEMALA (*Bernoulli*). Hb. Kew.

4. **Linum greggii,** Engelm. in A. Gray, Pl. Wright. i. p. 26.

NORTH MEXICO, near Saltillo (*Gregg*).

5. **Linum guatemalense,** Benth. Bot. Voy. Sulph. p. 67.

SOUTH MEXICO, Orizaba (*Sallé*), Vera Cruz (*Linden*, 821), Toluca (*Andrieux*, 524), Oaxaca (*Galeotti*, 4189); GUATEMALA, near Santa Maria, Volcan de Agua (*Salvin & Godman*), without locality (*Skinner*). Hb. Kew.

6. **Linum hypericifolium,** Presl, Reliq. Hænk. ii. p. 2; Planch. in Hooker's Lond. Journ. Bot. vii. p. 482.

"*L.* suffruticosum glabrum; caulibus erectis angulatis; foliis ovato-oblongis utrinque acutis sparsis oppositis ternisve; panicula ampla; sepalis ovatis acuminatis uninerviis; capsulis mucronatis." —*Presl.*

Planchon states (*loc. cit.*) that *L. guatemalense*, Benth., may possibly be this species, though its leaves are rather different, and the pedicels are always shorter than the flowers.

MEXICO (*Hænke*).

7. **Linum mexicanum,** H. B. K. Nov. Gen. et Sp. vi. p. 39; Bot. Reg. t. 1326.

SOUTH MEXICO, in woods near Santa Rosa, 7800 feet (*Humboldt & Bonpland*), Zimapan (*Coulter*, 759), Oaxaca (*Galeotti*, 4189), in woods near Jalapa (*Schiede & Deppe*), valley of Mexico (*Bourgeau*, 692), Chiapas (*Ghiesbreght*, 641), Desierto (*Bilimek*, 61). Hb. Kew.

8. **Linum orizabæ,** Planch. in Hooker's Lond. Journ. Bot. vii. p. 482.

SOUTH MEXICO, Orizaba, Vera Cruz (*Galeotti*, 821). Hb. Kew.

9. **Linum perenne,** Linn. Sp. Pl. p. 397.

Linum decurrens, Kellogg, in Proc. Calif. Acad. iii. p. 44, fig. 11.

North America from the Arctic Circle to—North Mexico, dry valleys near Saltillo (*Gregg*).—Also in Europe and N. Asia. Hb. Kew.

10. **Linum rupestre,** Engelm. Pl. Lindh. ii. p. 232.

Texas, New Mexico.—North Mexico, Saltillo (*Gregg*).

Var. β. **cymosulum,** Engelm. in A. Gray, Pl. Wright. i. p. 26, in adnot.

North Mexico, Buena Vista (*Gregg*).

11. **Linum scabrellum,** Planch. in Hooker's Lond. Journ. Bot. vii. p. 507.

South Mexico, Zimapan (*Coulter*, 754). Hb. Kew.

12. **Linum schiedeanum,** Ch. et Schl. in Linnæa, v. p. 234.

South Mexico, Orizaba (*Botteri, Müller*), San Andres (*Schiede & Deppe*), Regla (*Ehrenberg*).

Var. **coulterianum,** Planch.

Zimapan (*Coulter*, 758). Hb. Kew.

13. **Linum tenellum,** Ch. et Schl. in Linnæa, v. p. 235.

South Mexico, Jalapa (*Galeotti*, 4042 and 7071; *Schiede & Deppe*), Vera Cruz (*Linden*, 822). Hb. Kew.

[14. **Linum usitatissimum,** Linn. Sp. Pl. p. 397.

A European species introduced into Mexico, Orizaba (*Botteri*, 744). Hb. Kew.]

15. **Linum virginianum,** Linn. Sp. Pl. p. 398.

North America from New Jersey to Florida, Texas and—Mexico, Orizaba (*Bourgeau*, 3210). Hb. Kew.

Tribe ERYTHROXYLEÆ.

2. ERYTHROXYLON.

Erythroxylon, Linn. Gen. Plant. n. 575; Benth. et Hook. Gen. Plant. i. p. 244.

Shrubs and trees, upwards of fifty species, of which about ten occur in Africa and Madagascar, three in East India, and one in Australia, the remainder being American.

1. **Erythroxylon macrophyllum,** Cav. Diss. t. 227.

Erythroxylon amplum, Benth.

Erythroxylon floribundum, Seem. nec Mart.

South Mexico, valley of Cordova (*Bourgeau*, 1956 and 2211); Panama, Veraguas (*Seemann*).—Colombia, Guiana, West Indies. Hb. Kew.

2. **Erythroxylon mexicanum,** H. B. K. Nov. Gen. et Sp. v. p. 178.

South Mexico, near Chilpancingo (*Humboldt & Bonpland*).

3. **Erythroxylon panamense,** Turcz. in Bull. Soc. Nat. Mosc. 1863, p. 581.
PANAMA, Chagres (*Fendler*, 1931). Hb. Kew.

4. **Erythroxylon popayanense,** H. B. K. Nov. Gen. et Sp. v. p. 177 ?
PANAMA, Bujio railway-station (*S. Hayes*).—COLOMBIA. Hb. Kew.

5. **Erythroxylon,** sp. n. ? (*E. betulaceo* aff.)
SOUTH MEXICO, Vera Cruz (*Galeotti*, 7171). Hb. Kew.

6. **Erythroxylon,** sp.
COSTA RICA (*Endres*, 157). Hb. Kew.

[*Humiriaceæ* is an order consisting of three or four genera and about twenty-five species, which, with the exception of one Tropical-African and one Fijian, are restricted to Tropical America, chiefly in North Brazil and Guiana; but none have as yet been detected in Central America or Mexico.]

Order XXVIII. MALPIGHIACEÆ.

Malpighiaceæ, Benth. et Hook. Gen. Plant. i. p. 247.

This order consists of fifty genera, comprising about 600 species, whereof two or three are Australian, about a dozen occur in Tropical Africa, as many in the East Indies, and the remainder are nearly all American, attaining their greatest concentration in Brazil and Guiana. A few species are found in the extratropical regions of North and South America.

Tribe MALPIGHIEÆ.

The whole of this tribe is restricted to America; it is characterized by having wingless fruits.

1. BYRSONIMA.

Byrsonima, Rich. et Juss. in Ann. Mus. xviii. p. 481; Benth. et Hook. Gen. Plant. i. p. 251.

Trees or shrubs, often climbing.

1. **Byrsonima coriacea,** DC. Prodr. i. p. 580.
Byrsonima berteroana, Ad. Juss. Monogr. p. 39.
GUATEMALA (*Skinner*).—JAMAICA and ST. VINCENT. Hb. Kew.

2. **Byrsonima cotinifolia,** H. B. K. Nov. Gen. et Sp. v. p. 152, t. 447.
NORTH MEXICO, Cerro de Pinal (*Seemann*); SOUTH MEXICO, San Blas to Tepic (*Coulter*, 864), Tepic and Acapulco (*Lay & Collie*), in rocky places between Laguna Verde and Actopan and Tecoluta (*Schiede & Deppe*), Chiapas (*Ghiesbreght*). Hb. Kew.

3. **Byrosonima crassifolia,** H. B. K. Nov. Gen. et Sp. v. p. 149.

Byrsonima cumingiana, Ad. Juss.

Panama (*Sinclair*; *Fendler*, 24; *Seemann*, 320).—Colombia, Venezuela, Trinidad, Cuba, and Dominica. Hb. Kew.

4. **Byrsonima karwinskiana,** Ad. Juss. Monogr. p. 34.

South Mexico, Yucatan and Tabasco (*Johnson*), in savannas near Vera Cruz (*Linden*, 913). Hb. Kew.

5. **Byrsonima oaxacana,** Ad. Juss. Monogr. p. 29.

Byrsonima cotinifolia, Benth. nec H. B. K.

South Mexico, Guichilona, between Tehuantepec and the river Guazacualco (*Andrieux*, 491; *Hartweg*). Hb. Kew.

6. **Byrsonima panamensis,** Beurling, Vetensk. Akad. Handl. 1854, p. 117.

Panama (*Billberg*).

7. **Byrsonima pulchra,** DC. Prodr. i. p. 580; Calques des Dess. Fl. Mex. 134.

Mexico (*Moçino & Sessé*).

8. **Byrsonima rufescens,** Bert. Fl. Guat. p. 18.

Guatemala, Esquintla (*Velasquez*).

9. **Byrsonima spicata,** DC. Prodr. i. p. 580.

Malpighia spicata, Cav. Diss. 409, t. 237.

Panama, near the city of Panama (*S. Hayes*, 349).—Cuba, Dominica, Trinidad, and northern parts of South America. Hb. Kew.

10. **Byrsonima stigmatophorus,** Schl. in Linnæa, x. p. 241.

South Mexico, at Tehuantepec, Oaxaca (*Karwinski*).

11. **Byrsonima verbascifolia,** A. Rich. in Ad. Juss. Monogr. p. 26.

Malpighia verbascifolia, Aubl. Guian. t. 184.

Panama (*Sinclair*, *Hinds*, *Fendler*).—Common in Colombia, Guiana, Brazil, and occurring in Trinidad. Hb. Kew.

2. MALPIGHIA.

Malpighia, Linn. Gen. Plant. n. 572; Benth. et Hook. Gen. Plant. i. p. 251.

This genus comprises about twenty species of shrubs and small trees.

1. **Malpighia emarginata,** DC. Prodr. i. p. 578; Calques des Dess. Fl. Mex. 135.

Mexico (*Moçino & Sessé*).

2. **Malpighia galeottiana,** Ad. Juss. Monogr. p. 7.

North Mexico, San Luis Potosi (*Virlet d'Aoust*, 503); South Mexico, mountains of Oaxaca, at 5500 feet (*Galeotti*, 4330). Hb. Paris.

3. **Malpighia glabra,** Linn. Sp. Pl. p. 609; Cav. Diss. t. 234.

TEXAS.—NORTH MEXICO, Monterey (*Eaton & Edwards*); SOUTH MEXICO, Mirador, Vera Cruz (*Linden*, 914), Teapa (*Linden*, 1043), Tantoyuca (*Ervendberg*), Zimapan (*Coulter*, 852); COSTA RICA (*Endres*).

Var. β. **acuminata,** Ad. Juss.

Malpighia nitida, Mill.

NICARAGUA, Sapoa and Tortuga (*Œrsted*); PANAMA, common in dry localities (*Seemann*). Hb. Kew.—This species also occurs in VENEZUELA and some of the West-India Islands, including CUBA and JAMAICA. Hb. Kew.

4. **Malpighia heterophylla,** Griseb. in Linnæa, xxii. p. 2.

MEXICO (*Ehrenberg*, 624).

5. **Malpighia incana,** Mill. Dict., ex Ad. Juss. Monogr. p. 11.

Malpighia campechiensis, Poir.

SOUTH MEXICO, Campeche.

6. **Malpighia mexicana,** Ad. Juss. Monogr. p. 13.

SOUTH MEXICO, Gonacatepec (*Andrieux*, 490), Oaxaca (*Galeotti*, 4329), without habitat (*Jurgensen*, 279). Hb. Kew.

7. **Malpighia parvifolia,** Ad. Juss. Monogr. p. 14.

SOUTH MEXICO, Oaxaca (*Galeotti*, 4327). Hb. Kew.

8. **Malpighia punicifolia,** Linn. nec Cav., Ad. Juss. Monogr. p. 10.

PANAMA (*Duchassaing*).—COLOMBIA.

9. **Malpighia undulata,** Ad. Juss. Monogr. p. 12.

SOUTH MEXICO, around Puente Nacional, Vera Cruz (*Linden*). Hb. Delessert.

3. BUNCHOSIA.

Bunchosia, Rich. et Juss. in Ann. Mus. xviii. p. 481; Benth. et Hook. Gen. Plant. i. p. 252.

About twenty-two species of shrubs and trees, chiefly natives of the countries north of the equator.

1. **Bunchosia bilocellata,** Schl. in Linnæa, x. p. 241.

Bunchosia discolor, Turcz.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 2048, 2433), Orizaba (*Botteri*, 927, 1199, 2433; *Bilimek*, 223), Jalapa (*Schiede*). Hb. Kew.

2. **Bunchosia cornifolia,** H. B. K. Nov. Gen. et Sp. v. p. 154.

Bunchosia glauca, Seem., nec H. B. K.

PANAMA, Cruces in sunny situations (*Seemann*, 524), near the city of Panama (*S. Hayes*). —VENEZUELA. Hb. Kew.

3. **Bunchosia glauca,** H. B. K. Nov. Gen. et Sp. v. p. 155.

South Mexico, Zimapan (*Coulter*, 861), without locality (*Bates*).—Colombia; Peru. Hb. Kew.

4. **Bunchosia glandulifera,** H. B. K. Nov. Gen. et Sp. v. p. 154; Jacq. Ic. Rar. iii. t. 469.

Nicaragua, Granada (*Œrsted*).—Venezuela.

5. **Bunchosia lindeniana,** Ad. Juss. Monogr. p. 81.

South Mexico, Mirador, Vera Cruz (*Linden*, 911), Jalapa (*Galeotti*, 4340), Yucatan and Tabasco (*Johnson*), without localities (*Jurgensen*, *Harris*); Costa Rica (ex *Grisebach*).—Peru; Jamaica. Hb. Kew.

6. **Bunchosia lanceolata,** Turcz. in Bull. Soc. Nat. Mosc. 1859, i. p. 266. =*B. discolor*, Turcz.? *B. bilocellata*, Schl.

South Mexico, Orizaba (*Botteri*).

7. **Bunchosia montana,** Ad. Juss. Monogr. p. 86.

South Mexico, Tehuacan, Oaxaca (*Galeotti*, 4331). Hb. Kew.

8. **Bunchosia nitida,** A. Rich. in Ann. Mus. xviii. p. 481.

Malpighia nitida, Jacq. Amer. p. 136; Cav. Diss. t. 239; nec Miller.

South Mexico, near Campeche (*Linden*).—Colombia; Guiana.

9. **Bunchosia pilosa,** H. B. K. Nov. Gen. et Sp. v. p. 156.

Bunchosia mollis, Seem., nec Benth.

Panama, near the city of Panama (*Seemann*, 82; *S. Hayes*, 77).—Colombia; Peru. Hb. Kew.

10. **Bunchosia strigosa,** Schl. in Linnæa, x. p. 242.

South Mexico, Vera Cruz (*Galeotti*, 4345), region of Orizaba (*Bourgeau*, 2617). Hb. Kew.

11. **Bunchosia,** sp.

South Mexico, Orizaba (*Botteri*, 1093 and 1109). Hb. Kew.

4. GALPHIMIA.

Galphimia, Cav. Ic. v. p. 61; Benth. et Hook. Gen. Plant. i. p. 254.

Shrubs and undershrubs, about a dozen species, chiefly found in Mexico and Central America, but extending to Brazil. The species appear to have been unduly multiplied by Bartling.

1. **Galphimia glauca,** Cav. Ic. v. p. 61, t. 489.

North Mexico, Sierra Madre (*Seemann*), Zacatecas (*Hartweg*); South Mexico, Zimapan (*Coulter*, 865), without exact localities (*Beechey*, *Parkinson*, *Bates*, *&c.*); Guatemala, Volcan de Fuego (*Salvin & Godman*, *Skinner*); Nicaragua, Segovia (*Œrsted*). Hb. Kew.

2. **Galphimia glandulosa,** Cav. Ic. vi. p. 43, t. 563.

Var. α. **ovalifolia,** DC. Prodr. i. p. 582; Calques des Dess. Fl. Mex. 140.
NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*, 974). Hb. Paris.

Var. β. **oblongifolia,** DC. Prodr. i. p. 582; Calques des Dess. Fl. Mex. 139.
MEXICO (*Moçino & Sessé*).

3. **Galphimia gracilis,** Bartl. in Linnæa, xiii. p. 552.
Galphimia glauca hortul., nec Cav.
MEXICO.

4. **Galphimia grandiflora,** Bartl. in Linnæa, xiii. p. 554.
MEXICO (*Hegewisch*). Hb. Acad. Göttingen.

5. **Galphimia hirsuta,** Cav. Ic. v. p. 62.
SOUTH MEXICO, Oaxaca, 6000 to 7500 feet (*Galeotti*, 4335), Oaxaca (*Ghiesbreght*). Hb. Paris.

6. **Galphimia humboldtiana,** Bartl. in Linnæa, xiii. p. 555.
Galphimia glandulosa, H. B. K. Nov. Gen. et Sp. v. p. 172, t. 452, nec Cav.
SOUTH MEXICO, on the western declivity of the mountains between Alto de los Caxones and Acaguisotla (*Humboldt & Bonpland*).

7. **Galphimia latifolia,** Bartl. in Linnæa, xiii. p. 553.
MEXICO (*Hunnemann*, who sent seeds of it to Europe in 1837).

8. **Galphimia linifolia,** A. Gray, Gen. Ill. ii. p. 196, t. 173.
Galphimia angustifolia, Bth.
TEXAS, NEW MEXICO, CALIFORNIA.—NORTH MEXICO, Monterey, Nuevo Leon (*Eaton & Edwards*), from San Luis Potosi to San Antonio (*Parry*, 94). Hb. Kew.

9. **Galphimia multicaulis,** Ad. Juss. Monogr. p. 68.
SOUTH MEXICO, Huanapan, Oaxaca (*Andrieux*, 496), Mexico (*Jurgensen*, 288). Hb. Kew.

10. **Galphimia paniculata,** Bartl. in Linnæa, xiii. p. 556.
MEXICO (*Hegewisch*). Hb. Acad. Göttingen.

5. ECHINOPTERYS.

Echinopterys, A. Juss. Monogr. p. 88; Benth. et Hook. Gen. Plant. i. p. 254.

The genus is limited to the following species, which is a slender shrub.

1. **Echinopterys lappula,** Ad. Juss. Monogr. p. 88, t. 9.
NORTH MEXICO, Sierra Madre (*Seemann*); SOUTH MEXICO, Oaxaca (*Galeotti*, 4328), Bolaños (*Coulter*, 866), between Acatlan and Chila, Puebla (*Andrieux*, 498), without any indication of locality (*Bates & Parkinson*). Hb. Kew.

6. LASIOCARPUS.

Lasiocarpus, Liebm. in Vidensk. Meddel. 1853, p. 90; Benth. et Hook. Gen. Plant. i. p. 255.

Limited to this shrubby species.

1. **Lasiocarpus salicifolius,** Liebm. in Vidensk. Meddel. 1853, p. 90.

SOUTH MEXICO, among shrubs on the banks of the Rio de las Vueltas, Oaxaca (*Liebmann*).

Tribe BANISTERIEÆ.

The members of this tribe have winged fruits; and several of the genera are represented in the Old World by a few species.

7. HETEROPTERYS.

Heteropterys, Kunth in H. B. K. Nov. Gen. et Sp. v. p. 163; Benth. et Hook. Gen. Plant. i. p. 256.

A genus of about eighty shrubby species, a few of which are natives of Tropical Africa.

1. **Heteropterys beecheyana,** Ad. Juss. Monogr. p. 221.

Heteropterys tomentosa, Hook. et Arn., nec Juss.

Banisteria? paniculata, DC. Prodr. i. p. 591; Calques des Dess. Fl. Mex. 131.

SOUTH MEXICO, between Huahuapan and Oaxaca (*Andrieux*, 493), Acapulco (*Botteri*), Vera Cruz (*Galeotti*, 4338; *Linden*, 909), valley of Cordova (*Bourgeau*, 1484), Orizaba (*Bilimek*, 39), Sierra San Pedro Nolasco &c. (*Jurgensen*, 749); NICARAGUA, Segovia (*Œrsted*).—ECUADOR. Hb. Kew.

2. **Heteropterys cotinifolia,** Ad. Juss. Monogr. p. 184.

SOUTH MEXICO, Totolapa, Oaxaca (*Andrieux*, 492), near Tantoyuca (*Ervendberg*, 209). Hb. Kew.

3. **Heteropterys floribunda,** H. B. K. Nov. Gen. et Sp. v. p. 166.

Heteropterys lessertiana, Seem.?

SOUTH MEXICO, Vera Cruz (*Linden*, 912; *Galeotti*, 4339), valley of Cordova (*Bourgeau*, 2322), Yucatan and Tabasco (*Johnson*), Teapa (*Linden*), near Venta del Exido (*Humboldt & Bonpland*); GUATEMALA (*Skinner*); NICARAGUA (*Œrsted*); PANAMA, Cruces &c. (*Seemann*). Hb. Kew.

4. **Heteropterys gayana,** Ad. Juss. Monogr. p. 185.

SOUTH MEXICO, Guichilona, between Tehuantepec and the river Guazacualco (*Andrieux*, 494), region of Orizaba (*Bourgeau*, 3112). Hb. Kew.

5. **Heteropterys laurifolia,** Ad. Juss. Monogr. p. 204.

Banisteria laurifolia, Linn. Sp. Pl. p. 611; Bot. Reg. t. 937.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 2282).—COLOMBIA; WEST INDIES. Hb. Kew.

6. **Heteropterys lindeniana,** Ad. Juss. Monogr. p. 203.
South Mexico, Yucatan (*Linden*, 917).—St. Vincent. Hb. Kew.

7. **Heteropterys longifolia,** H. B. K. Nov. Gen. et Sp. v. p. 166.
South Mexico, near the city of Mexico, 7000 feet (*Humboldt & Bonpland*), Yucatan and Tabasco (*Johnson*, 72).

8. **Heteropterys mathewsiana,** Ad. Juss. Monogr. p. 200.
Panama (*Hinds*).—Peru.

9. **Heteropterys platyptera,** DC. Prodr. i. p. 592.
Panama, Chagres (*Fendler*, 46).—West Indies, Colombia, and Guiana. Hb. Kew.

10. **Heteropterys stannea,** Griseb. in Œrst. Malpig. Am. Cent. p. 46.
Costa Rica, Aguacate (*Œrsted*).

11. **Heteropterys,** sp.
South Mexico, San Blas to Tepic (*Coulter*, 863). Hb. Kew.

12. **Heteropterys,** sp. (*H. cotinifoliæ* aff.)
Guatemala, Volcan de Fuego (*Salvin*). Hb. Kew.

8. BRACHYPTERYS.

Brachypterys, A. Juss. Monogr. p. 101 ; Benth. et Hook. Gen. Plant. i. p. 256.

An American genus of two or three species.

1. **Brachypterys borealis,** Ad. Juss. in Archiv. du Mus. d'Hist. Nat. iii. p. 356, t. 2. fig. 16.
Banisteria picta, H. B. K.
South Mexico, region of Orizaba (*Bourgeau*, 2486); Honduras, Belize (*Marsh*); Guatemala, Volcan de Fuego (*Salvin*); Panama, Chagres (*Fendler*, 48).—Jamaica, Trinidad, Guiana, North Brazil, &c. Hb. Kew.

9. STIGMAPHYLLON.

Stigmaphyllon, Ad. Juss. in St.-Hil. Fl. Bras. Merid. iii. t. 170, 171 ; Benth. et Hook. Gen. Plant. i. p. 257.

A genus of about fifty species of climbing shrubs, restricted to Tropical America.

1. **Stigmaphyllon ellipticum,** Ad. Juss. Monogr. p. 123.
Banisteria elliptica, H. B. K.
Stigmaphyllon mucronatum, Ad. Juss.
Banisteria mucronata, DC.
Stigmaphyllon ternatum, Ad. Juss.
Banisteria ternata, DC.
South Mexico, Vera Cruz (*Linden*, 907); Nicaragua, Gulf of Fonseca (*Sinclair*),

Chontales (*Tate*, 413), Granada (*Œrsted*); PANAMA, Chagres (*Fendler*, 48), without locality (*Seemann*).—COLOMBIA. Hb. Kew.

2. **Stigmaphyllon fulgens,** Ad. Juss. Monogr. p. 116.

NICARAGUA, Realejo (*Hinds*).—ST. VINCENT; GUIANA. Hb. Kew.

3. **Stigmaphyllon humboldtianum,** Ad. Juss. Monogr. p. 113.

Banisteria tiliæfolia, H. B. K.

SOUTH MEXICO, Vera Cruz (*Galeotti*, 4344); GUATEMALA (*Skinner*, *Friedrichsthal*); NICARAGUA, Chontales (*Seemann*, *Levy*), Realejo (*Sinclair*).—COLOMBIA. Hb. Kew.

4. **Stigmaphyllon hypargyreum,** Pl. et Tr. Prodr. Fl. N. Gran. i. p. 316.

PANAMA (*Duchassaing*). Hb. Pavon.

5. **Stigmaphyllon lindenianum,** Ad. Juss. Monogr. p. 108.

SOUTH MEXICO, Teapa (*Linden*, 1044); GUATEMALA (*Skinner*). Hb. Kew.

6. **Stigmaphyllon periplocifolium,** Ad. Juss. Monogr. p. 126.

Banisteria periplocifolia, DC.

PANAMA, Veraguas (*Bridges*).—JAMAICA, ANTIGUA, CUBA, and GUIANA. Hb. Kew.

7. **Stigmaphyllon retusum,** Griseb. in Œrst. Malpig. Am. Cent. p. 45.

Stigmaphyllon humboldtianum, Seem., nec Ad. Juss.

NICARAGUA, Granada (*Œrsted*); PANAMA, in the ruins of Old Panama (*Seemann*).—COLOMBIA. Hb. Kew.

8. **Stigmaphyllon,** sp.

SOUTH MEXICO, Oaxaca (*Ghiesbreght*, 294). Hb. Kew.

9. **Stigmaphyllon,** sp. (aff. *S. pubero*).

SOUTH MEXICO, near Tantoyuca (*Ervendberg*, 323). Hb. Kew.

10. **Stigmaphyllon,** sp.

SOUTH MEXICO, near Tantoyuca (*Ervendberg*), Yucatan and Tabasco (*Johnson*). Hb. Kew.

10. BANISTERIA.

Banisteria, Linn. Gen. Plant. n. 573; Benth. et Hook. Gen. Plant. i. p. 257.

About sixty species, the greater part climbing shrubs; all natives of Tropical America, but most numerous in Brazil.

1. **Banisteria argentea,** Ad. Juss. Monogr. p. 139.

Heteropterys argentea, H. B. K. Nov. Gen. et Sp. v. p. 164, t. 450.

PANAMA, Paraiso railway-station (*S. Hayes*, 229), without precise localities (*Seemann & Duchassaing*).—And southward to PERU. Hb. Kew.

2. **Banisteria billbergiana,** Beurling, in Vetensk. Akad. Handl. 1854, p. 118.

PANAMA, on the sea-shore of the island of Manzanillo (*Billberg*).

3. **Banisteria ferruginea,** Cav. Diss. p. 424, t. 248 ?
PANAMA (*Seemann*, 79). Hb. Kew.
The true plant is found in the WEST INDIES and VENEZUELA to BRAZIL.

4. **Banisteria maracaybensis,** Ad. Juss. Monogr. p. 164.

β. **angustifolia,** Œrst. et Griseb. Malpig. Cent. Am. p. 46.
NICARAGUA, Segovia (*Œrsted*).—COLOMBIA.

5. **Banisteria schomburgkiana,** Benth. in Hook. Lond. Journ. Bot. vii. p. 129.
COSTA RICA, Aguacate (*Œrsted*).—GUIANA.

Tribe HIRÆEÆ.

Five out of ten of the genera of this tribe are peculiar to the Old World.

11. TRIOPTERYS.

Triopterys, Linn. Gen. Plant. n. 574; Benth. et Hook. Gen. Plant. i. p. 259.

Three species of climbing shrubs, inhabiting the West Indies and Mexico.

1. **Triopterys,** sp. nov. ?
SOUTH MEXICO, without locality (*Jurgensen*, 761). Hb. Kew.

12. TETRAPTERYS.

Tetrapterys, Cav. Diss. p. 433; Benth. et Hook. Gen. Plant. i. p. 260.

Upwards of fifty species, chiefly climbing shrubs; all American, and most numerous in Brazil.

1. **Tetrapterys acapulcensis,** H. B. K. Nov. Gen. et Sp. v. p. 168.
SOUTH MEXICO, Acapulco (*Humboldt & Bonpland, Lay & Collie*), Zimapan (*Coulter*, 855), Cuernavaca (*Bilimek*, 47), without localities (*Jurgensen & Hahn*). Hb. Kew.

2. **Tetrapterys argentea,** Bertol. Fl. Guat. p. 19.
GUATEMALA, Antigua (*Velasquez*).

3. **Tetrapterys calophylla,** Ad. Juss. Monogr. p. 271.

Var. **glabrifolia,** Griseb.
PANAMA (*S. Hayes*, 398; *Seemann*, 84, 1216). Hb. Kew.
The type in NORTH BRAZIL, GUIANA, &c.

4. **Tetrapterys cotoneaster,** Ad. Juss. Monogr. p. 274.
Galphimia? mollis, H. B. K.
SOUTH MEXICO, near Tepecuacuilco, 3120 feet (*Humboldt & Bonpland*).

5. **Tetrapterys eriocarpa,** Bertol. Fl. Guat. p. 19.
GUATEMALA (*Velasquez*).

6. **Tetrapterys inæqualis,** Cav. Diss. ix. t. 260.
Banisteria? bracteata, DC.
COSTA RICA (*Œrsted*).—PORTO RICO, JAMAICA, and BRAZIL.

7. **Tetrapterys mexicana,** Hook. et Arn. Bot. Beech. Voy. p. 281.
SOUTH MEXICO, Jalisco (*Lay & Collie*), region of Orizaba (*Bourgeau*, 3252; *Botteri*, 549), valley of Cordova (*Bourgeau*, 1511). Hb. Kew.

8. **Tetrapterys schiedeana,** Schl. et Ch. in Linnæa, v. p. 218.
SOUTH MEXICO, Orizaba (*Botteri*, 978; *Bourgeau*, 2724, 2873), Vera Cruz (*Galeotti*, 4337; *Linden*, 908); Jalapa (*Schiede*). Hb. Kew.

9. **Tetrapterys seemanni,** Pl. et. Tr. Prodr. Fl. N. Gran. i. p. 333.
Banisteria ferruginea, Seem. (pro parte), nec Cav.
PANAMA (*Seemann, Duchassaing*).

10. **Tetrapterys,** sp.
PANAMA (*S. Hayes*, 571). Hb. Kew.

11. **Tetrapterys,** sp.
PANAMA (*S. Hayes*, 606). Hb. Kew.

12. **Tetrapterys,** sp. (aff. *T. schiedeanæ*).
GUATEMALA, Volcan de Fuego (*Salvin*). Hb. Kew.

13. **Tetrapterys,** sp.
GUATEMALA, Volcan de Fuego (*Salvin*). Hb. Kew.

13. HIRÆA.

Hiræa, Jacq. Stirp. Am. p. 137; Benth. et Hook. Gen. Plant. i. p. 260.

About fifty species, inhabiting Tropical America, the greater part climbing shrubs.

1. **Hiræa barclayana,** Benth. Bot. Voy. Sulph. p. 75.
Tetrapterys panamensis, Seem.
Hiræa panamensis, Griseb.
SAN SALVADOR, Libertad (*Barclay*); PANAMA, Santiago de Veraguas (*Seemann*). Hb. Kew.

2. **Hiræa chrysophylla,** Ad. Juss. Monogr. p. 318.
NICARAGUA, San Juan (*Œrsted*).—NORTH BRAZIL, GUIANA, and ST. LUCIA.

3. **Hiræa manzinellensis,** Beurling in Vetensk. Akad. Handl. 1854, p. 117.
PANAMA, Manzanillo (*Billberg*).

4. **Hiræa polybotrya,** Ad. Juss. Monogr. p. 299.

SOUTH MEXICO, between Chila and Huanapan, in the provinces of Puebla and Oaxaca (*Andrieux*, 495). Hb. Kew.

5. **Hiræa septentrionalis,** Ad. Juss. Monogr. p. 309.

Hiræa? macroptera, DC. Prodr. i. p. 586; Calques des Dess. Fl. Mex. 130.

NORTH MEXICO, Monterey, Nuevo Leon (*Eaton & Edwards*; *Platz*, 1398), between Reyon and Ures, Sonora (*Thurber*); SOUTH MEXICO, Zimapan (*Coulter*, 860). Hb. Kew.

6. **Hiræa sericea,** Engelm. A. Gray, Pl. Wright. i. p. 37.

NORTH MEXICO, near Cadena (*Wislizenus*), plain west of Mapimi (*Gregg*).

7. **Hiræa (Mascagavia) spicigera,** Turcz. in Bull. Soc. Nat. Mosc. 1863, i. p. 584.

SOUTH MEXICO, valley of Mexico.

8. **Hiræa swartziana,** Ad. Juss. Monogr. p. 317.

NICARAGUA, San Juan del Norte (*Œrsted*).—WEST INDIES; COLOMBIA.

9. **Hiræa,** sp. nova?

NORTH MEXICO, Sonora Alta (*Coulter*, 856). Hb. Kew.

10. **Hiræa,** sp. ("An *H. macroptera*, DC.? sed calyces eglandulosi," MSS. in Hb. Kew.)

MEXICO (*Parkinson*). Hb. Kew.

11. **Hiræa,** sp.

PANAMA (*S. Hayes*, 393). Hb. Kew.

12. **Hiræa,** sp.

NICARAGUA, Chontales (*Tate*, 285). Hb. Kew.

13. **Hiræa,** sp.

GUATEMALA (*Friedrichsthal*). Hb. Kew.

14. JUBELINA.

Jubelina, Ad. Juss. Monogr. p. 325; Benth. et Hook. Gen. Plant. i. p. 260.

Climbing shrubs; three species described, natives of Guiana and Nicaragua.

1. **Jubelina nicaraguensis,** Griseb. et Œrst. Malpig. Cent. Am. p. 48.

NICARAGUA, Segovia (*Œrsted*).

Tribe GAUDICHAUDIEÆ.

This tribe is exclusively American, one genus reaching the northern limits of the order on this continent.

15. GAUDICHAUDIA.

Gaudichaudia, H. B. K. Nov. Gen. et Sp. v. p. 156; Benth. et Hook. Gen. Plant. i. p. 261.

About fifteen species of climbing shrubs, ranging from Mexico to Venezuela and Colombia.

1. **Gaudichaudia acuminata,** Ad. Juss. Monogr. p. 343.

Hiræa acuminata, DC. Prodr. i. p. 586; Calques des Dess. Fl. Mex. 128.

Mexico, without locality (*Moçino & Sessé*); San Luis Potosi to Tampico (*Palmer*, 1042). Hb. Kew.

2. **Gaudichaudia albida,** Ch. et Schl. in Linnæa, v. p. 217.

South Mexico, Hacienda de la Laguna (*Schiede & Deppe*), Vera Cruz (*Galeotti*, 4342; *Linden*, 906). Hb. Kew.

3. **Gaudichaudia arnottiana,** Ad. Juss. Monogr. p. 340.

Hiræa cycloptera, Hook. et Arn. Bot. Beech. Voy. t. 57.

South Mexico, Tepic and Jalisco (*Beechey*); without locality (*Bourgeau*, 731). Hb. Kew.

4. **Gaudichaudia brevipes,** Ad. Juss. Monogr. p. 343.

Banisteria brevipes, DC. Prodr. i. p. 591; Calques des Dess. Fl. Mex. 129.

Mexico, without locality (*Moçino & Sessé*).

5. **Gaudichaudia congestiflora,** Ad. Juss. Monogr. p. 336.

South Mexico, exact locality uncertain (*Andrieux*, 497), Aguas Calientes, 5000 feet (*Ærsted*). Hb. Kew.

6. **Gaudichaudia cynanchoides,** H. B. K. Nov. Gen. et Sp. v. p. 158, t. 445.

South Mexico, near Valladolid, 6000 feet (*Humboldt & Bonpland*).

7. **Gaudichaudia enrico-martinezii,** Barcena, 'Descripcion de una nueva Planta Mexicana' (1878), cum icone colorata.

Mexico, Nochistongo (*Barcena*).

8. **Gaudichaudia filipendula,** Ad. Juss. Monogr. p. 340.

Gaudichaudia mucronata, Ad. Juss.

Hiræa? mucronata, DC. Prodr. i. p. 586; Calques des Dess. Fl. Mex. 124.

North Mexico, San Luis Potosi (*Virlet d'Aoust*; *Parry & Palmer*, 95), San Blas to Tepic (*Coulter*, 854); South Mexico, Cuernavaca (*Bilimek*, 1), valley of Mexico near Guadalupe (*Bourgeau*, 731); Guatemala, Volcan de Fuego (*Salvin*). Hb. Kew.

9. **Gaudichaudia karwinskiana,** Ad. Juss. Monogr. p. 338.

Mexico (*Karwinski*). Hb. Monac.

10. **Gaudichaudia mollis,** Benth. Pl. Hartw. p. 6.

North Mexico, Zacatecas (*Hartweg*); South Mexico, Tacubaya (*Aschenborn*, 283). Hb. Kew.

11. **Gaudichaudia oxyota,** Ad. Juss. Monogr. p. 343.

Hiræa ? *oxyota,* DC. Prodr. i. p. 586; Calques des Dess. Fl. Mex. 126; = *G. mollis* ?

MEXICO.

12. **Gaudichaudia pentandra,** Ad. Juss. Monogr. p. 339.

MEXICO, near Saltepec (*Karwinski*). Hb. Monac.

13. **Gaudichaudia podocarpa,** Ad. Juss. Monogr. p. 342.

Hiræa ? *podocarpa,* DC. Prodr. i. p. 586; Calques des Dess. Fl. Mex. 127.

MEXICO.

14. **Gaudichaudia schiedeana,** Ad. Juss. Monogr. p. 337.

Triopterys sericea, Schl.

NORTH MEXICO, Sierra Madre (*Seemann*, 2150); SOUTH MEXICO, Tehuacan, Oaxaca (*Galeotti*, 4326), Tacubaya (*Schaffner*), Malpays de Naulingo (*Schiede*). Hb. Kew.

15. **Gaudichaudia webbiana,** Ad. Juss. Monogr. p. 341.

NEW SPAIN (*Pavon*). Hb. Webb.

16. **Gaudichaudia,** sp.

SOUTH MEXICO, Guadalupe (*Bilimek*, 26). Hb. Kew.

16. ASPICARPA.

Aspicarpa, Lagasca, Nov. Gen. et Sp. p. 1; Benth. et Hook. Gen. Plant. i. p. 261.

About half a dozen species, inhabiting Texas and Mexico and ? Central America.

1. **Aspicarpa hartwegiana,** Ad. Juss. Monogr. p. 344.

Gaudichaudia humilis, Benth.

NORTH MEXICO, Zacatecas (*Hartweg*, 12; *Coulter*, 858). Hb. Kew.

2. **Aspicarpa longipes,** A. Gray, Pl. Wright. i. p. 37, ii. p. 30.

NEW MEXICO.—NORTH MEXICO, mountain-valleys near Santa Cruz, Sonora (*Wright*), Sierra del Pajarito (*Thurber*, *Schott*). Hb. Kew.

3. **Aspicarpa urens,** Lag. ex Ad. Juss. Monogr. p. 345.

Aspicarpa hirtella, Rich. in Mém. Mus. ii. p. 309, t. 13.

NEW SPAIN.

17. JANUSIA.

Janusia, Ad. Juss. Monogr. p. 349; Benth. et Hook. Gen. Plant. i. p. 262.

Four shrubby species, ranging from Brazil to Texas.

1. **Janusia gracilis,** A. Gray, Pl. Wright. i. p. 37, ii. p. 30.

TEXAS; NEW MEXICO.—NORTH MEXICO, Chihuahua and Sonora (*Torrey*), mountains of Guadalupe Pass and heads of the Agua Prieta, east of Santa Cruz, Sonora (*Wright*). Hb. Kew.

Order XXIX. ZYGOPHYLLACEÆ.

Zygophyllaceæ, Benth. et Hook. Gen. Plant. i. p. 262.

Herbs or shrubs, very few arboreous, comprising about 100 species belonging to seventeen genera. They are dispersed throughout tropical and subtropical regions, though they are rare in subtropical regions of the southern hemisphere.

1. TRIBULUS.

Tribulus, Linn. Gen. Plant. n. 532; Benth. et Hook. Gen. Plant. i. p. 264.

About fifteen herbaceous species, represented in nearly all warm countries of the world. One or two species are amphigæous.

1. **Tribulus cistoides,** Linn. Sp. Pl. p. 554; A. Gray, Ill. Gen. t. 145.

The Southern States of NORTH AMERICA to—SOUTH MEXICO, plain of Oaxaca, 5000 feet (*Galeotti*, 3062; *Coulter*, 782).—Widely spread in Tropical and Subtropical SOUTH AMERICA and the WEST INDIES. Occurring also in AUSTRALIA, ASIA, and AFRICA, and some of the PACIFIC ISLANDS. Hb. Kew.

2. **Tribulus grandiflorus,** Benth. et Hook. Gen. Pl. i. p. 264.

Kallstræmia grandiflora, Torr. in A. Gray, Pl. Wright. i. p. 28.

TEXAS; NEW MEXICO; ARIZONA; CALIFORNIA.—NORTH MEXICO, Sonora Alta (*Coulter*, 783); SOUTH MEXICO, between Tehuantepec and the Pacific Ocean (*Andrieux*, 474); GUATEMALA, roadsides &c. (*Bernoulli*, 756). Hb. Kew.

3. **Tribulus maximus,** Linn. Sp. Pl. p. 553.

Kallstræmia maxima, Torr. et Gr. Fl. N. Am. i. p. 213; Gray, Gen. Ill. ii. p. 117, t. 146.

NORTH MEXICO, Zacatecas (*Hartweg*), Monterey (*Eaton & Edwards*), Chihuahua (*Potts*); SOUTH MEXICO, Zimapan (*Coulter*, 780 and 781); GUATEMALA (*Friedrichsthal*); NICARAGUA, in plantations (*Levy*); PANAMA (*S. Hayes*, 728).—A very variable and exceedingly common plant in Tropical and Subtropical America, including some of the WEST-INDIAN ISLANDS. It has also been collected in Western TROPICAL AFRICA. Hb. Kew.

[*Fagonia* is a small widely dispersed genus of this family likely to exist in Mexico. It is represented in California and Chili.]

2. LARREA.

Larrea, Cav. Ann. Cienc. Nat. ii. p. 119; Benth. et Hook. Gen. Plant. i. p. 267.

Four shrubby species restricted to America, ranging from Texas, California, and Mexico to the Andes of South America, and reappearing in South Brazil.

1. **Larrea mexicana,** Moric. Pl. Nouv. d'Am. p. 71, t. 48; Gray, Gen. Ill. ii. t. 147.

Zygophyllum tridentatum, DC. Prodr. i. p. 706; Calques des Dess. Fl. Mex. 159.

TEXAS; NEW MEXICO; CALIFORNIA.—NORTH MEXICO, Sonora Alta (*Coulter*, 778), San Luis Potosi (*Galeotti*, 1362), without locality (*Gregg*). Hb. Kew.

3. SERICODES.

Sericodes, A. Gray, Pl. Wright. i. p. 28; Benth. et Hook. Gen. Plant. i. p. 265.

Limited to this species:—

1. **Sericodes greggii,** A. Gray, Pl. Wright. i. p. 28, in adnot.

NORTH MEXICO, San Lorenzo (*Gregg*).

4. GUAIACUM.

Guaiacum, Linn. Gen. Plant. n. 518; Benth. et Hook. Gen. Plant. i. p. 267.

Shrubs or trees, about eight species, restricted to the northern part of South America, West Indies, Central America, and Subtropical North America.

1. **Guaiacum coulteri,** A. Gray, Pl. Thurb. p. 312.

NORTH MEXICO, between Rayon and Ures, Sonora (*Thurber*; ? *Coulter*, 779). Hb. Kew.

It is possible that this and the next are the same species; but the material at Kew is insufficient to decide the question.

2. **Guaiacum guatemalense,** Pl. MS. in Hb. Kew.

GUATEMALA, hot plains of Zacapa (*Skinner*), Acasaguastlan (*Bernoulli*). Hb. Kew.

3. **Guaiacum parvifolium,** Pl. in Gray, Pl. Wright. i. p. 29.

SOUTH MEXICO, between Tehuantepec and the Pacific Ocean (*Andrieux*, 475). Hb. Kew.

4. **Guaiacum verticale,** Ort. Dec. viii. p. 93.

Guaiacum sloanei, Shuttl.

NEW SPAIN.—FLORIDA, BAHAMAS, and SAN DOMINGO.

5. CHITONIA.

Chitonia, Moç. et Sessé, DC. Prodr. i. p. 707; Benth. et Hook. Gen. Plant. i. p. 268.

1. **Chitonia mexicana,** Moc. et Sessé in DC. Prodr. i. p. 707; Zucc. Nov. Stirp. fasc. i. p. 355, t. 171; DC., Calques des Dess. Fl. Mex. xxiv. c.

SOUTH MEXICO, Zimapan (*Coulter*, 784), Oaxaca (*Ghiesbreght*; *Galeotti*, 1445). Hb. Kew.

Order XXX. GERANIACEÆ.

Geraniaceæ, Benth. et Hook. Gen. Plant. i. p. 269.

Herbaceous or shrubby plants, a few arboreous. There are about 750 species, belonging to twenty-one genera, generally dispersed in temperate and subtropical regions, especially abundant in South Africa, and rare in Australia.

Tribe GERANIEÆ.

This tribe has nearly the same distribution as the whole family.

1. GERANIUM.

Geranium, Linn. Gen. Plant. n. 832; Benth. et Hook. Gen. Plant. i. p. 272.

Nearly 100 species, with few exceptions herbaceous, and represented in nearly all temperate regions, including the mountains within the tropics.

1. **Geranium carolinianum,** Linn. Sp. Pl. p. 956; Cav. Diss. iv. t. 84. fig. 1, et t. 124. fig. 2. (An *G. dissecti*, L., var. ?)

A common plant in Temperate NORTH AMERICA, extending southward to—NORTH MEXICO, Sierra Madre (*Seemann*), Chihuahua (*Torrey*), region of San Luis Potosi (*Parry & Palmer*, 100); SOUTH MEXICO, Real del Monte (*Coulter*, 762, 763), Chiapas (*Linden*, 927, 928), Orizaba (*Linden*, 815; *Botteri*, 598, 599), Oaxaca, 9000 to 11000 feet (*Galeotti*, 4019, 4024), cultivated fields near Mexico (*Bourgeau*, 694); ? GUATEMALA, Volcan de Fuego (*Salvin*). Hb. Kew.

2. **Geranium gracile,** Engelm. in A. Gray, Pl. Fendl. i. p. 47, in adnot.

NORTH MEXICO, Cosiquiriachi, Chihuahua (*Wislizenus*).

3. **Geranium hernandezii,** DC. Prodr. i. p. 640; Calques des Dess. Fl. Mex. 147.

NORTH MEXICO, Llanos, Chihuahua (*Wislizenus*), without habitat (*Gregg*); SOUTH MEXICO, Oaxaca, 7000 to 9000 feet (*Galeotti*, 4022), valley of Mexico (*Bourgeau*, 290), without localities (*Aschenborn*, *Bates*, *Graham*, and *Parkinson*). Hb. Kew.

4. **Geranium mexicanum,** H. B. K. Nov. Gen. et Sp. v. p. 230.

SOUTH MEXICO, between Guanaxuato and Santa Rosa (*Humboldt & Bonpland*), Pazcuaro (*Hartweg*), Jalacingo (*Schiede & Deppe*), grassy places about Jalapa (*Schiede*). Hb. Kew.

5. **Geranium potentillæfolium,** DC. Prodr. i. p. 639; Calques des Dess. Fl. Mex. 148.

SOUTH MEXICO, in pine-woods, Toluca, at 9000 to 10000 feet (*Heller*), Tlalpuxahua (*Graham*), forests of the Desierto Viejo (*Bourgeau*, 766). Hb. Kew.

6. **Geranium seemanni,** Peyr. in Linnæa, xxx. p. 66.

South Mexico, Toluca, Cocustepec, 8800 feet (*Heller*).

Peyritsch also refers here Galeotti's 4024 and 4019, and Berlandier's 829.

7. **Geranium schiedeanum,** Schl. in Linnæa, x. p. 253.

North Mexico, region of San Luis Potosi (*Parry & Palmer*, 99); South Mexico, near La Joya (*Schiede*), Real del Monte (*Coulter*, 764), Oaxaca (*Galeotti*, 4011, 4023), Chiapas (*Ghiesbreght*, 657); Guatemala, without habitat (*Skinner*). Hb. Kew.

8. **Geranium,** sp.

South Mexico, Real del Monte (*Galeotti*, 4010). Hb. Kew.

9. **Geranium,** sp.

North Mexico, Sierra Madre (*Seemann*, 2165). Hb. Kew.

10. **Geranium,** sp.

South Mexico, Orizaba (*Botteri*, 600). Hb. Kew.

2. ERODIUM.

Erodium, Lher. Geran. tt. 1–6; Benth. et Hook. Gen. Plant. i. p. 272.

About fifty species, nearly all herbaceous. Two or three are widely-spread weeds of cultivation; two or three inhabit South Africa and Australia; and the remainder are almost restricted to the temperate regions of the northern hemisphere in the Old World.

1. **Erodium cicutarium,** Leman in DC. Fl. Fr. iv. p. 840.

Widely dispersed in the north temperate regions of the Old World, and now exceedingly common in many parts of North America, but supposed to have been originally introduced by the Spaniards.—North Mexico, Monterey (*Eaton & Edwards*); South Mexico, Tacubaya (*Bourgeau*, 30), at the foot of the mountains of Orizaba (*Schiede & Deppe*), without localities (*Hahn*, *Bates*, &c.). Hb. Kew.

2. **Erodium moschatum,** Willd. Sp. Pl. iii. p. 631.

A native of the temperate regions of the Old World, introduced into—Mexico, Tacubaya (*Bourgeau*, 29). Hb. Kew.

3. **Erodium moranense,** Willd. in H. B. K. Nov. Gen. et Sp. v. p. 228.

South Mexico, Moran, 7980 feet (*Humboldt & Bonpland*), near the city of Mexico (*Aschenborn*, 567 and 626), Zimapan (*Coulter*, 765). Hb. Kew.

Tribe PELARGONIEÆ.

This tribe is limited to two genera, *Pelargonium* and *Tropæolum*. The former genus is confined to the Old World, and with few exceptions to South Africa.

3. TROPÆOLUM.

Tropæolum, Linn. Gen. Plant. n. 466; Benth. et Hook. Gen. Plant. i. p. 274.

A genus of between thirty and forty trailing and twining herbaceous species, restricted to America, and, with few exceptions, to South America.

1. **Tropæolum peregrinum,** Linn. Sp. Pl. ed. 2, i. p. 490, nec Hb. Linn.; Jacq. Hort. Schœnb. t. 98; Bot. Mag. t. 1351.

Tropæolum aduncum, Sm. Tour, i. p. 158.

South Mexico, roadsides near Santa Fé (*Bourgeau*, 1176). Hb. Kew.

This South-American species is probably only an escape from cultivation in Mexico.

2. **Tropæolum emarginatum,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 425.

South Mexico, San Bartolo (*Linden*, 848); ? Guatemala, without locality (*Savage*). Hb. Paris.

3. **Tropæolum pendulum,** Kl. in Otto et Dietr. Allg. Gartz. xviii. p. 377.

Central America.

4. **Tropæolum,** sp.

Panama, Volcano of Chiriqui (*Warszewicz*). Hb. Kew.

5. **Tropæolum,** sp. (aff. *T. tuberoso*).

Guatemala, cultivated in gardens in Dueñas (*Salvin & Godman*). Hb. Kew.

Tribe OXALIDEÆ.

Besides the two following genera, three others are referred to this tribe. They comprise only five species, one Bolivian and four Asiatic.

4. OXALIS.

Oxalis, Linn. Gen. Plant. n. 582; Benth. et Hook. Gen. Plant. i. p. 276.

A genus of upwards of 200 species, with few exceptions herbaceous plants. One or two species have a wide range in temperate regions, one or two in the tropics, and nearly all the others are divided between South Africa and America, very few occurring north of Mexico.

1. **Oxalis acuminata,** Turcz. in Bull. Soc. Nat. Mosc. 1859, i. p. 427.

South Mexico (*Galeotti*, 3990).

2. **Oxalis albicans,** H. B. K. Nov. Gen. et Sp. v. p. 244.

South Mexico, Moran &c., 8040 to 8880 feet (*Humboldt & Bonpland*).—And Peru.

3. **Oxalis angustifolia,** H. B. K. Nov. Gen. et Sp. v. p. 249.

South Mexico, on the western declivity near La Venta del Peregrino, 600 feet (*Humboldt & Bonpland*).

4. **Oxalis corniculata,** Linn. Sp. Pl. p. 624; Jacq. Ox. t. 5.

This plant is found in nearly ALL (except the colder) PARTS of the WORLD, varying very much in different localities.

SOUTH MEXICO, Jalapa (*Coulter*, 773 and 774; *Galeotti*, 3994), Mirador (*Linden*, 813), Orizaba (*Botteri*, 781 and 802); GUATEMALA, Volcan de Fuego (*Salvin*); NICARAGUA Chontales (*Tate*). Hb. Kew.

5. **Oxalis decaphylla,** H. B. K. Nov. Gen. et Sp. v. p. 238, t. 468.

Oxalis hernandezii, DC.?, Benth. Pl. Hartw.

TEXAS to—NORTH MEXICO, region of San Luis Potosi (*Parry & Palmer*, 102); SOUTH MEXICO, near the rock El Peñon, 7020 feet (*Humboldt & Bonpland*), San Gerónimo (*Bourgeau*, 27), without special locality (*Graham*). Hb. Kew.

6. **Oxalis dendroides,** H. B. K. Nov. Gen. et Sp. v. p. 250.

SOUTH MEXICO, Mirador and Oaxaca (*Liebmann*), valley of Cordova (*Bourgeau*), without any indication of the habitats (*Jurgensen*, 775, *& Harris*).—And southward to PERU. Hb. Kew.

7. **Oxalis dichondræfolia,** A. Gray, Pl. Wright. i. p. 27.

TEXAS, NEW MEXICO.—NORTH MEXICO, Monterey, Nuevo Leon (*Eaton & Edwards*). Hb. Kew.

8. **Oxalis discolor,** Kl. in Otto und Dietr. Allg. Gartz. viii. p. 257; Link et Kl. Ic. Pl. ii. t. 29.

MEXICO.

9. **Oxalis divergens,** Benth. Pl. Hartw. p. 9; Bot. Reg. t. 1620.

SOUTH MEXICO, Oaxaca, 7000 to 8000 feet (*Galeotti*, 3999), Tacubaya (*Bourgeau*, 25 and 289). Hb. Kew.

10. **Oxalis drummondii,** A. Gray, Pl. Wright. ii. p. 25.

TEXAS.—NORTH MEXICO, Sonora (*Torrey*).

11. **Oxalis ehrenbergii,** Schl. in Otto und Dietr. Allg. Gartz. vi. p. 313; Hort. Halens. ii. t. 6.

MEXICO.

12. **Oxalis fasciculata,** Turcz. in Bull. Soc. Nat. Mosc. 1859, i. p. 272.

SOUTH MEXICO, Vera Cruz (*Ghiesbreght*, 13).

13. **Oxalis galeottii,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 433.

SOUTH MEXICO (*Galeotti*, 3995). Hb. Paris.

14. **Oxalis grahamiana,** Benth. Pl. Hartw. p. 9.

NORTH MEXICO, region of San Luis Potosi (*Parry & Palmer*, 103); SOUTH MEXICO, Tlalpuxahua (*Graham*), Tacubaya (*Bourgeau*, 289, in part). Hb. Kew.

15. **Oxalis hedysaroides,** H. B. K. Nov. Gen. et Sp. v. p. 247.

Panama, Punta de Garachina (*Seemann*, 1063).—Southward to Peru and Brazil. Hb. Kew.

16. **Oxalis hernandezii,** DC. Prodr. i. p. 695; Calques des Dess. Fl. Mex. 149.

Mexico, without indication of locality (*Hernandez*).

17. **Oxalis herpestica,** Schl. in Linnæa, xxvii. p. 525.

Guatemala, introduced with orchids into Van Houtte's nurseries at Ghent.

18. **Oxalis jacquiniana,** H. B. K. Nov. Gen. et Sp. v. p. 235.

South Mexico, near Real del Monte (*Humboldt & Bonpland*), Tlalpuxahua (*Graham*). Hb. Kew.

19. **Oxalis latifolia,** H. B. K. Nov. Gen. et Sp. v. p. 237, t. 467.

South Mexico, near Campeche (*Humboldt & Bonpland*), hillocks near Santa Fé (*Bourgeau*, 288 and 289), about Toluca (*Andrieux*, 478), Orizaba (*Botteri*, 782 and 1122), Zimapan (*Coulter*, 767); Guatemala, Volcan de Fuego (*Salvin*); Costa Rica, in gardens and moist meadows, San José (*Polakowsky*). Hb. Kew.

20. **Oxalis lasiandra,** Grah. Bot. Mag. t. 3896.

South Mexico, without exact locality (*Graham*), Zimapan (*Coulter*, 772). Hb. Kew.

21. **Oxalis lilacina,** Kl. in Otto und Dietr. Allg. Gartz. viii. p. 258.

Mexico.

22. **Oxalis lindeni,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 429.

Oxalis acuminata, Schl., nec Turcz.

South Mexico, Mirador (*Linden*, *Heller*), Hacienda de la Laguna (*Schiede & Deppe*), Oaxaca (*Galeotti*, 3984), valley of Cordova (*Bourgeau*, 1948). Hb. Kew.

23. **Oxalis lunulata,** Zucc. Oxal. Am., Nachtrag, p. 24.

North Mexico, Zacatecas (*Hartweg*, 46); South Mexico, Toluca, 8800 feet (*Heller*).

Var. β. **microphylla,** Benth. Pl. Hartw. p. 59.

Mexico, La Parada (*Hartweg*), without locality (*Sallé*). Hb. Kew.

24. **Oxalis martiana,** Zucc. Oxal. Am. n. 2; Bot. Mag. t. 3938.

Oxalis floribunda, Lehm. in Link et Otto, Ic. t. 10.

Oxalis bipunctata, Hook. Bot. Mag. t. 2781.

South America, "Mexico," Hort. Berol. Hb. Kew.

This species is now naturalized in many parts of the Old World.

25. **Oxalis neæi,** DC. Prodr. i. p. 690.

Var. **glabrata,** Baker, Ref. Bot. t. 292.

South Mexico, Acapulco (*Sinclair*); Guatemala, Barranco del Zapote (*Bernoulli*, 310); Honduras, Tigre Island, Gulf of Fonseca (*Sinclair*).—Guiana &c. Hb. Kew.

26. **Oxalis nudiflora,** DC. Prodr. i. p. 695; Calques des Dess. Fl. Mex. 150.
MEXICO, without indication of locality (*Moçino & Sessé*).

27. **Oxalis pentantha,** Jacq. Oxal. Am. p. 21, t. 1.
SOUTH MEXICO, near Manantial, on hillocks Hacienda de la Laguna (*Schiede & Deppe*).—Also from VENEZUELA.

28. **Oxalis psilotricha,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 428.
SOUTH MEXICO, Zacuapan, Vera Cruz (*Linden*, 809), around Tehuantepec (*Andrieux*, 480); NICARAGUA (*Tate*, 40). Hb. Kew.

29. **Oxalis rubrocincta,** Lindl. Bot. Reg. xxviii. t. 64.
GUATEMALA, seeds collected by *Hartweg*.

30. **Oxalis sepium,** A. St.-Hil. Fl. Bras. Mer. i. p. 111.
PANAMA, Chagres (*Fendler*, 25) to—SOUTH BRAZIL and the WEST INDIES. Hb. Kew.

31. **Oxalis tephrodes,** Turcz. in Bull. Soc. Nat. Mosc. 1858, p. 428.
SOUTH MEXICO, Vera Cruz (*Galeotti*, 3991).

32. **Oxalis tetraphylla,** Cav. Ic. iii. t. 237.
Oxalis deppei, Schl.
MEXICO, Sierra San Pedro &c. (*Jurgensen*, 704).—MARTINIQUE &c. Hb. Kew.

33. **Oxalis vespertilionis,** Torr. et Gray, Fl. N. Am. i. p. 679.
TEXAS.—GUATEMALA (*Friedrichsthal*).

34. **Oxalis verticillata,** DC. Prodr. i. p. 691; Calques des Dess. Fl. Mex. 151.
MEXICO, in gardens at San Angelo.

35. **Oxalis wrightii,** A. Gray, Pl. Wright. i. p. 27, et ii. p. 25.
TEXAS.—NORTH MEXICO, Santa-Cruz valley, Sonora (*Thurber*), near Rock Creeks and Presidio del Norte (*Wright*). Hb. Kew.

36. **Oxalis,** sp.
SOUTH MEXICO (*Galeotti*, 4021). Hb. Kew.

37. **Oxalis,** sp.
SOUTH MEXICO, valley of Mexico (*Bourgeau*, 28).

38. **Oxalis,** sp.
MEXICO (*Halsted*). Hb. Kew.

39. **Oxalis,** sp.
SOUTH MEXICO, fields near the city of Mexico (*Bourgeau*, 701). Hb. Kew.

5. AVERRHOA.

Averrhoa, Linn. Gen. Plant. n. 576; Benth. et Hook. Gen. Plant. i. p. 277.

There are two shrubby species indigenous in Tropical Asia, both of which have become widely dispersed in other countries through cultivation.

1. **Averrhoa bilimbi,** Linn. Sp. Pl. p. 613; Cav. Diss. vii. t. 219.
A native of Tropical Asia, extensively naturalized in hot countries.
GUATEMALA (*Friedrichsthal*). Hb. Kew.

Tribe BALSAMINEÆ.

Limited to the following genus and the monotypic Asiatic *Hydrocera*.

6. IMPATIENS.

Impatiens, Linn. Gen. Plant. n. 1008; Benth. et Hook. Gen. Plant. i. p. 277.

A genus of upwards of 150 (chiefly herbaceous) species, 130 of which inhabit the mountains of Tropical and Subtropical Asia, twenty the mountains of Tropical Africa, Madagascar, &c., two or three North America, and three or four Europe and North-eastern Asia.

1. **Impatiens,** sp.
SOUTH MEXICO, Xochialco (*Hahn*). Hb. Paris.

Order XXXI. RUTACEÆ.

Rutaceæ, Benth. et Hook. Gen. Plant. i. p. 278.

About ninety genera, comprising 700 species, are referred to this family. They are chiefly trees and shrubs, a few being herbaceous, and are generally dispersed in tropical and subtropical regions, but most numerous in South Africa and Australia.

Tribe CUSPARIEÆ.

About fifty species, belonging to nine genera, constitute this tribe, which is confined to America, and most numerously represented in Brazil.

1. ERYTHROCHITON.

Erythrochiton, Nees et Mart. in Nov. Act. Nat.-Cur. xi. pp. 151 et 165; Benth. et Hook. Gen. Plant. i. p. 284.

Shrubs or small trees. Four or five species are known between South Mexico and Brazil.

1. **Erythrochiton lindeni,** Hemsley. (Tab. XII.)

Glabrum, foliis longe petiolatis unifoliolatis membranaceis lanceolatis acuminatis acutis integris, floribus in cymas parvas 2–4chotomas longissime pedunculatas dispositis, sepalis inæqualibus fere liberis lanceolatis acutis, petalis extus dense sericeo-villosis plus minusve cohærentibus corollam tubulosam arcuatam formantibus, lobis brevibus apice patentibus, staminum 3 inferiorum antheris vacuis.

Frutex præter flores glaber, ramis robustis ad apices tantum foliosis. *Folia* longe petiolata, uni-

foliolata, lamina cum petiolo articulata, minute pellucido-punctulata, membranacea, integra, lanceolata, 6–12-pollicaris, breviter acuminata, acuta, costa venisque lateralibus subtus prominentibus, petiolo omnino tereti 2–4-pollicari. *Flores* in cymas scorpoideas parvas densas 2–4-ramosas longe pedunculatas dispositi, pedunculis axillaribus nudis 6–9-pollicaribus, pedicellis brevibus (1–2 lin.) basi bracteolatis sparse pubescentibus, bracteolis parvis deciduis; sepala persistentia, colorata, inæqualia, anguste lanceolata, acuta, ad pollicaria, extus puberula; petala in corollam arcuatam extus dense sericeo-villosam coalita, ad bipollicaria, apice libera, patentia; stamina 5, inclusa, antheris 3 inferioribus vacuis, filamentis cum corolla cohærentibus. *Carpella* 5 ("ovula et capsula seminaque *Erythrochitonis*," Baillon).—*Toxosiphon lindeni*, Baill. Adansonia, x. p. 310.

South Mexico, dark forests of Teapa, Tabasco (*Linden*, 1623); Nicaragua, without locality (*Tate*, 41 and 42). Hb. Kew.

EXPLANATION OF TAB. XII.

Inflorescence and leaves, natural size.

Fig. 1, a flower cut open, showing the three sterile and two fertile stamens; 2, a fertile stamen, enlarged.

I have not been able to follow Baillon in regarding this as the type of a distinct genus.

Tribe RUTEÆ.

Herbs or undershrubs, with the exception of three or four species confined to the Old World.

2. PEGANUM.

Peganum, Linn. Gen. Plant. n. 601; Benth. et Hook. Gen. Plant. i. p. 287.

Four herbaceous species are known: one is widely dispersed in the Old World; two are natives of Central and Eastern Asia; and one is Mexican.

1. **Peganum mexicanum**, A. Gray, Pl. Wright. i. p. 30 in adnot.

New Mexico.—North Mexico, Saltillo and Monterey (*Gregg*), El Gallo, Chihuahua (*Thurber*, 836), San Luis Potosi to San Antonio (*Parry*, 105). Hb. Kew.

3. THAMNOSMA.

Thamnosma, Torr. et Fremont, 2nd Report, p. 313; Benth. et Hook. Gen. Plant. i. p. 288.

The genus is at present limited to the following species, which are both undershrubs, and an undescribed species recently discovered in South Africa.

1. **Thamnosma texana**, Benth. et Hook. Gen. Plant. i. p. 288.

Rutosma texana, A. Gray, Gen. Ill. ii. p. 143, t. 155.

Texas; New Mexico.—North Mexico, Santa Cruz, Sonora (*Wright*), Monterey, Nuevo Leon (*Gregg*), San Luis Potosi to San Antonio (*Parry*, 104). Hb. Kew.

2. **Thamnosma montana,** Frem. et Torr. in Fremont, 2nd Report, p. 313, and Bot. Whipple Exped. p. 17, t. 3.

California.—North Mexico, Sierra Tula, Sonora (*Schott*).

Tribe ZANTHOXYLEÆ.

4. ASTROPHYLLUM.

Astrophyllum, Torr. in Bot. Pope's Exped., Pacif. R. Rep., ii. p. 161; Benth. et Hook. Gen. Plant. i. p. 296.

The genus is limited to the following shrubby species.

1. **Astrophyllum dumosum,** Torr. Bot. Mex. Bound. Surv. p. 42.

New Mexico.—North Mexico, west slopes of Sierra del Pajarito, Sonora (*Schott*), Chihuahua (*Bigelow*). Hb. Kew.

5. CHOISYA.

Choisya, Kunth, in H. B. K. Nov. Gen. et Sp. vi. p. 4 (*Juliana,* Llav. et Lex.); Benth. et Hook. Gen. Plant. i. p. 297.

A monotypic shrubby genus.

1. **Choisya ternata,** H. B. K. Nov. Gen. et Sp. vi. p. 6, t. 513.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 229); South Mexico, cultivated in and around the city of Mexico, in the mountains above Toluca (*Andrieux*, 477), Las Vegas, Vera Cruz (*Linden*, 431; *Galeotti*, 1799), Jalacingo (*Schiede & Deppe*), Desierto Viejo (*Bourgeau*, 1269), Cañada (*Bilimek*, 77). Hb. Kew.

6. ZANTHOXYLON.

Zanthoxylon, Linn. Gen. Plant. n. 1109; Benth. et Hook. Gen. Plant. i. p. 297.

A genus of about eighty species of shrubs and trees, distributed over most tropical and subtropical countries.

1. **Zanthoxylon affine,** H. B. K. Nov. Gen. et Sp. vi. p. 3.

South Mexico, at Laka Cuiseo, at 5400 feet (*Humboldt & Bonpland*).

2. **Zanthoxylon ghiesbreghtii,** Turcz. in Bull. Soc. Nat. Mosc. 1859, i. p. 274.

South Mexico, Zacuapan, Vera Cruz (*Ghiesbreght*, 122 and 225).

3. **Zanthoxylon limoncillo,** Planch. et Œrst. MSS. in Hb. Kew.

Zanthoxylon pterota, Seem. Bot. Voy. 'Herald,' nec H. B. K.

Texas.—Mexico, without locality (*Bates*); Panama, Boquete, Volcan de Chiriqui (*Seemann*, 1655). Hb. Kew.

4. **Zanthoxylon melanostictum,** Schl. et Ch. in Linnæa, v. p. 231.

Mexico, without any indication of the locality (*Schiede & Deppe*).

5. **Zanthoxylon pentanome,** DC. Prodr. i. p. 725; Calques des Dess. Fl. Mex. 187.

MEXICO, without locality (*Moçino & Sessé*).

6. **Zanthoxylon pterota,** Linn., H. B. K. Nov. Gen. et Sp. vi. p. 3.

NORTH MEXICO, Santa Rosa, Cohahuila (*Bigelow*); SOUTH MEXICO, Tepic (*Lay*), prov. Mexico (*Bates*), between Misantla and Nantla (*Schiede & Deppe*).—Also in the WEST INDIES. Hb. Kew.

7. **Zanthoxylon rigidum,** H. B. K. Nov. Gen. et Sp. vi. p. 4.

PANAMA (*Duchassaing*).—COLOMBIA.

8. **Zanthoxylon,** sp.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 2232). Hb. Kew.

9. **Zanthoxylon,** sp.

SOUTH MEXICO, Orizaba (*Botteri*, 990). Hb. Kew.

10. **Zanthoxylon,** sp.

SOUTH MEXICO, Jalapa (*Linden*, 728), region of Orizaba (*Bourgeau*, 2621). Hb. Kew.

11. **Zanthoxylon,** sp.

PANAMA, swampy ground near Frijoli railway-station (*S. Hayes*, 138). Hb. Kew.

7. DECATROPIS.

Decatropis, Hook. fil. in Benth. et Hook. Gen. Plant. i. p. 298.

A monotypic, shrubby or arboreous genus.

1. **Decatropis coulteri,** Hook. fil. *l. c.* (Tab. XIII.)

Arbor (?), ramis novellis cano- vel rufo-velutinis. *Folia* alterna, imparipinnata, exstipulata, 4–5-juga, suprema 6–9-pollicaria, foliolis petiolulatis oppositis coriaceis lanceolatis oblongisve, 2–3-pollicaribus, retusis, subtus dense cano- vel rufo-velutinis, supra costa canaliculata hirsuta excepta glaberrimis, minutissima reticulatione notatis, petiolo bipollicari, rhachi petiolulisque crassis teretibus velutinis. *Flores* albi, parvi, sessiles, in paniculas amplas ramosas axillares dispositi, ramis panicularum calycibusque lanato-velutinis; calyx subcupularis, 5-dentatus; petala 5, lanceolata, membranacea; stamina 10, alterna breviora, filamentis filiformibus; ovarium alte 5-lobum, glabrum, apice tori insertum, lobis dorso carinatis, inter carinas concavis, stylis connatis brevissimis, ovulis in loculis 2 collateralibus. *Fructus* ignotus.

SOUTH MEXICO, Zimapan (*Coulter*, 871). Hb. Kew.

EXPLANATION OF TAB. XIII.

Flowering branch, natural size.

Figs. 1 and 2, flowers, enlarged; 3 and 4, ovary, enlarged (one of the lobes removed from the latter).

8. POLYASTER.

Polyaster, Hook. fil. in Benth. et Hook. Gen. Plant. i. p. 299.

A monotypic shrubby genus.

1. **Polyaster boronioides,** Hook. fil. in Benth. et Hook. Gen. Pl. i. p. 299.
SOUTH MEXICO, Zimapan (*Coulter*, 874). Hb. Kew.

9. MEGASTIGMA.

Megastigma, Hook. fil. in Benth. et Hook. Gen. Plant. i. p. 299.

The genus is limited to the two following shrubby species :—

1. **Megastigma galeottii,** Baill. Adans. x. p. 331.
SOUTH MEXICO, cactus-abounding plains on the Cordillera of Oaxaca (*Galeotti*, 7012). Hb. Kew.

2. **Megastigma skinneri,** Hook. fil. in Benth. et Hook. Gen. Pl. i. p. 299.
GUATEMALA, without locality (*Skinner*). Hb. Kew.

10. ESENBECKIA.

Esenbeckia, Kunth, in H. B. K. Nov. Gen. et Sp. vii. p. 246; Benth. et Hook. Gen. Plant. i. p. 299.

A genus comprising upwards of twenty arboreous and shrubby species, restricted to America and the West Indies.

1. **Esenbeckia berlandieri,** Baill. Adans. x. p. 151.
NORTH MEXICO, the woods around Tampico, Tamaulipas (*Berlandier*, 3125). Hb. Kew.

Tribe TODDALIEÆ.

The members of this tribe are spread over nearly the whole range of the family.

11. PTELEA.

Ptelea, Linn. Gen. Plant. n. 152; Benth. et Hook. Gen. Plant. i. p. 301.

Shrubs or small trees; about six species, inhabiting North America, including Mexico.

1. **Ptelea angustifolia,** Benth. Pl. Hartw. p. 9.
TEXAS; NEW MEXICO; CALIFORNIA.—NORTH MEXICO, Leon and Zacatecas (*Hartweg*, 42). Hb. Kew.

2. **Ptelea parvifolia,** A. Gray, MSS. in Hb. Kew.

Fruticosa glabra dense ramosa, foliis suboppositis petiolatis trifoliolatis, foliolis subcoriaceis creberrime nigro punctatis sessilibus, lateralibus multo minoribus, floribus minutissimis tetrameris, fructu obovato-elliptico basi auriculato.

Frutex vel *arbor* parva, dense ramosa, glaberrima. *Folia* petiolata, subopposita, trifoliolata (vel interdum bifoliolata, foliolum alterum integrum alterum basi unilobatum), foliolis sessilibus subcoriaceis, lanceolatis, obtusis vel interdum retusis, intermedio ad sesquipollicari, lateralibus duplo triplo quadruplove brevioribus, creberrime præcipue subtus nigro punctatis, supra nitidis. *Flores* minutissimi, tetrameri, breviter pedicellati, in cymas parvas terminales dispositi. *Fructus* (unicus tantum visus) obovato-ellipticus, basi auriculatus.

North Mexico, near Carrizal, Nuevo Leon (*Berlandier*, 1404), Buen Vista (*Gregg*). Hb. Kew.

3. **Ptelea pentandra,** DC. Prodr. ii. p. 83; Calques des Dess. Fl. Mex. 201.

South Mexico, Guanaxuato (*Hartweg*), without locality (*Moçino & Sessé*). Hb. Kew.

4. **Ptelea podocarpa,** DC. Prodr. ii. p. 83; Calques des Dess. Fl. Mex. 200.

Mexico, without locality (*Moçino & Sessé*).

5. **Ptelea trifoliata,** Linn. Sp. Pl. p. 173.

Southern States of North America, from Kentucky to—North Mexico, Fronteras, Sonora (*Torrey*).

6. **Ptelea,** sp.

South Mexico, Cordillera of Oaxaca, 6000 feet (*Galeotti*, 7169). Hb. Kew.

12. CASIMIROA.

Casimiroa, Llave et Lex. Nov. Veg. Descr. fasc. ii. p. 2; Benth. et Hook. Gen. Plant. i. p. 302.

Limited to the two arboreous species here enumerated.

1. **Casimiroa edulis,** Llave et Lex. Nov. Veg. Descr. ii. p. 2; Seem. Bot. Voy. 'Herald,' p. 273, t. 51 & 52.

Zanthoxylon araliaceum, Turcz.

North Mexico, frequent in the States of Cinaloa and Durango, both wild and cultivated (*Seemann*, 2137); South Mexico, Zimapan (*Coulter*, 787), Orizaba (*Botteri*, 1008); Guatemala, near the city of Guatemala (*S. Hayes*). Hb. Kew.

2. **Casimiroa sapota,** Œrst. in Vidensk. Meddel. 1857.

Nicaragua, Province of Segovia, in the vicinity of Chinotega, at 4000 feet (*Œrsted*).

Tribe AURANTIEÆ.

With the exception of the doubtful genus *Stauranthus*, this tribe (comprising twelve genera and above sixty species) is limited to the Old World.

13. STAURANTHUS.

Stauranthus, Liebm. in Vidensk. Meddel. 1853, p. 91; Benth. et Hook. Gen. Plant. i. p. 303.

The only species:—

1. **Stauranthus perforatus,** Liebm. in Vidensk. Meddel. 1853, p. 91.

South Mexico, in woods near Los dos Puentes, between Totutla, Vera Cruz, and San Antonio, Huatusco (*Liebmann*). Hb. Kew.

[Several of this tribe are cultivated, and partly or wholly naturalized, in Mexico and Central America; amongst which there are specimens at Kew of *Citrus aurantium*, *C. decumana*, *C. limonium*, *C. media*, and *C. vulgaris* and *Triphasia trifoliata*.]

Order XXXII. SIMARUBACEÆ.

Simarubeæ, Benth. et Hook. Gen. Plant. i. p. 306.

Trees and shrubs, about 120 species, belonging to upwards of thirty genera, generally dispersed in tropical countries, rare in subtropical regions.

Tribe SIMARUBEÆ.

1. QUASSIA.

Quassia, Linn. Gen. Plant. n. 521; Benth. et Hook. Gen. Plant. i. p. 308.

The genus consists of the following species, which is a large tree, and one shrubby species, a native of West Tropical Africa.

1. **Quassia amara,** Linn. fil. Suppl. p. 235; Lodd. Bot. Cab. t. 172; Bot. Mag. t. 497.

Nicaragua, Chontales (*Seemann*), without locality (*Lévy*); Panama, Isle of Taboga (*Seemann*), in damp woods near Frijoli railway-station (*S. Hayes*, 491).

Var. **grandiflora.**

Panama, Chagres (*Fendler*, 304).—Colombia, Guiana, and Brazil. Hb. Kew. Also a native of Trinidad, and introduced into some of the other West-Indian Islands.

2. SIMABA.

Simaba, Aubl. Pl. Guian. i. p. 400; Benth. et Hook. Gen. Plant. i. p. 308.

This genus is peculiar to America, and consists of about fourteen arboreous and shrubby species.

= Picrolemma

1. **Simaba bicolor,** Zucc. in Flora, 1832, ii. Beibl. p. 72.

Mexico (*Karwinski*).

2. **Simaba cedron,** Planch. in Hooker's Lond. Journ. Bot. vi. p. 566.

Costa Rica, Golfo Dulce (*Jomard*, Hb. Paris.); Panama, on the outskirts of forests, the banks of rivers, and the sea-shore in Darien, Panama, and Veraguas (*Seemann*).—Colombia. Hb. Kew.

3. **Simaba,** sp.

Guatemala (*Friedrichsthal*). Hb. Kew.

3. SIMARUBA.

Simaruba, Aubl. Pl. Guian. ii. p. 856; Benth. et Hook. Gen. Plant. i. p. 309.

Three arboreous species, endemic in America.

1. **Simaruba glauca,** DC. Prodr. i. p. 733.

FLORIDA.—NICARAGUA, environs of Granada (*Lévy*, 368); PANAMA, Remedios, Veraguas (*Seemann*).—Also in GUIANA, ST. VINCENT, DOMINICA, CUBA. Hb. Kew.

2. **Simaruba versicolor,** St.-Hil. Pl. Us. Bras. t. 5.

GUATEMALA (*Friedrichsthal*).—BRAZIL. Hb. Kew.

4. RIGIOSTACHYS.

Rigiostachys, Planch. in Hook. Lond. Journ. Bot. vi. p. 29; Benth. et Hook. Gen. Plant. i. p. 309.

1. **Rigiostachys bracteata,** Planch. in Hook. Lond. Journ. Bot. vi. p. 30; in Linnæa, xxiii. p. 442.

?*Recchia mexicana,* Moç. et Sessé.

SOUTH MEXICO, Pacific coast of Oaxaca (*Galeotti*, 7144). Hb. Kew.

Planchon would refer this to Rosaceæ, tribe Quillajeæ; and Baillon (Adansonia, x. p. 42) also thinks it should be placed in that order.

5. CASTELA.

Castela, Turpin in Ann. Mus. Par. vii. p. 78, t. 5; Benth. et Hook. Gen. Plant. i. p. 310.

There are six, shrubby species, all American.

1. **Castela lychnophoroides,** Liebm. in Vidensk. Meddel. 1853, p. 110.

SOUTH MEXICO, in arid plains near Tehuacan de las Granadas (*Liebmann*).

2. **Castela nicholsoni,** Hook. Bot. Misc. i. p. 271, t. 56.

TEXAS.—NORTH MEXICO, Mier, Nuevo Leon (*Thurber*). Hb. Kew.

3. **Castela retusa,** Liebm. in Vidensk. Meddel. 1853, p. 110.

SOUTH MEXICO, between Tehuantepec and San Carlos, Oaxaca (*Liebmann*). Hb. Kew.

4. **Castela tortuosa,** Liebm. in Vidensk. Meddel. 1853, p. 108.

SOUTH MEXICO, Cuesta de Quiotepec, Oaxaca (*Œrsted*). Hb. Kew.

6. HOLACANTHA.

Holacantha, A. Gray, Pl. Thurb. in Mem. Amer. Acad. nov. ser. v. p. 310; Benth. et Hook. Gen. Plant. i. p. 310.

About six shrubby species, restricted to Subtropical and Tropical America.

1. **Holacantha emoryi,** A. Gray, Pl. Thurber. p. 310, t. 8; Bot. Mex. Bound. t. 10.

ARIZONA.—NORTH MEXICO, on the desert between the Gila river and Tucson, Sonora (*Thurber*), near Sonoita (*Schott*). Hb. Kew.

7. BRUNELLIA.

Brunellia, Ruiz et Pav. Prodr. p. 71, t. 12; Benth. et Hook. Gen. Plant. i. p. 313.

An exclusively American genus, comprising about ten arboreous species.

1. **Brunellia comocladifolia,** Humb. et Bonpl. Pl. Æquin. i. p. 111, t. 59.
SOUTH MEXICO (*Jurgensen*, 605).—JAMAICA, COLOMBIA, and PERU. Hb. Kew.

2. **Brunellia? quadrilocularis,** Hook. et Arn. Bot. Beech. Voy. p. 282.
SOUTH MEXICO, Tepic (*Lay*).

Tribe PICRAMNIEÆ.

8. PICRELLA.

Picrella, Baill. Adansonia, x. p. 150.

Restricted to this one shrubby species:—

1. **Picrella trifoliata,** Baill. Adans. x. p. 150, t. 10.
SOUTH MEXICO (*Ghiesbreght*). Hb. Paris.

9. PICRAMNIA.

Picramnia, Swartz, Fl. Ind. Occ. i. p. 217, t. 4; Benth. et Hook. Gen. Plant. i. p. 315.

About twenty arboreous and shrubby species, all confined to tropical and subtropical America.

1. **Picramnia andicola,** Tul. in Ann. Sc. Nat. série 3, vii. p. 265.
SOUTH MEXICO, Cordillera of Vera Cruz, at 2500 feet (*Galeotti*, 3502).

2. **Picramnia antidesma,** Sw. Fl. Ind. occ. i. p. 218.
SOUTH MEXICO, banks of the Rio Puyapatengo, Teapa (*Linden*, 824), in woods about Jalapa (*Schiede & Deppe*). Hb. Kew.

Var. **nervosa,** Planch.
Cicca macrostachya, Benth.
SOUTH MEXICO, San Blas to Tepic (*Sinclair*).
This species has a wide range in the WEST INDIES and Tropical SOUTH AMERICA.

3. **Picramnia bonplandiana,** Tul. in Ann. Sc. Nat. série 3, vii. p. 266.
SOUTH MEXICO, region of Orizaba (*Bourgeau*, 2849), without habitat (*Hahn*). Hb. Kew.

4. **Picramnia carpinteræ,** Polakowsky, in Linnæa, xli. p. 553.
COSTA RICA, in primeval forests, Carpintera (*Polakowsky*).

5. **Picramnia ciliata,** Mart. Walp. Rep. ii. p. 830.

A BRAZILIAN species,—said by Polakowsky to grow in gardens and by waysides in COSTA RICA.

6. **Picramnia fessonia,** DC. Prodr. ii. p. 66.

MEXICO, without locality (*Moçino & Sessé*).

7. **Picramnia longissima,** Tul. in Ann. Sc. Nat. série 3, vii. p. 257.

PANAMA, without special localities (*S. Hayes*, 598, and *Seemann*).—COLOMBIA. Hb. Kew.

8. **Picramnia lindeniana,** Tul. in Ann. Sc. Nat. série 3, vii. p. 265.

SOUTH MEXICO, on the banks of the Rio Puyapatengo, Teapa (*Linden*).

9. **Picramnia polyantha,** Planch. in Hook. Lond. Journ. Bot. v. p. 577.

Rhus polyantha, Benth.

MEXICO, Villa Alta (*Hartweg*), without habitat (*Jurgensen*). Hb. Kew.

10. **Picramnia teapensis,** Tul. in Ann. Sc. Nat. série 3, vii. p. 265.

SOUTH MEXICO, Teapa (*Linden*).

11. **Picramnia? tetramera,** Turcz. in Bull. Soc. Nat. Mosc. 1863, i. p. 598.

SOUTH MEXICO (*Botteri*).

12. **Picramnia umbrosa,** Seem. Bot. Voy. 'Herald,' p. 97, t. 24.

PANAMA, Boquete, Veraguas (*Seemann*, 1252). Hb. Kew.

13. **Picramnia xalapensis,** Planch. in Hook. Lond. Journ. Bot. v. p. 577.

SOUTH MEXICO, Jalapa (*Galeotti*, 3506; *Linden*, 726). Hb. Kew.

14. **Picramnia,** sp. (*P. bonplandiana*, Tul.?)

SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*), Zacuapan (*Linden*, 727). Hb. Kew.

15. **Picramnia,** sp. ("*P. pendula*, Tul.")?

SOUTH MEXICO, San Cristobal (*Bourgeau*, 3217). Hb. Paris.

10. KŒBERLINIA.

Kœberlinia, Zucc. in Flora, 1832, ii. Beibl. p. 73; Benth. et Hook. Gen. Plant. i. p. 315.

Monotypic, an almost leafless shrub.

1. **Kœberlinia spinosa,** Zucc. Flora, 1832, ii. Beibl. p. 73.

TEXAS.—NORTH MEXICO, Potosi, in the plain (*Hartweg*), Bolson de Mapimi (*Gregg*), San Luis Potosi to San Antonio (*Parry*, 106). Hb. Kew.

11. SPATHELIA.

Spathelia, Linn. Gen. Plant. n. 373; Benth. et Hook. Gen. Plant. i. p. 315.

A West-Indian genus of three arboreous species, and the following doubtful one:—

1. **Spathelia? rhoifolia,** DC. Prodr. ii. p. 84; Calques des Dess. Fl. Mex. 190.
MEXICO, without locality (*Moçino & Sessé*).

Order XXXIII. OCHNACEÆ.

Ochnaceæ, Benth. et Hook. Gen. Plant. i. p. 316.

This order comprises about 150 shrubby and arboreous species, belonging to twelve genera. They are almost confined to tropical regions.

Tribe OCHNEÆ.

The genera of this tribe are divided between the Old and New Worlds.

1. GOMPHIA.

Gomphia, Schreb. Gen. i. p. 291; Benth. et Hook. Gen. Pl. i. p. 318.

About eighty species, most numerous in South America; ten are Tropical-African, and two or three East-Indian.

1. **Gomphia jurgensenii,** Planch. in Hook. Lond. Journ. Bot. vi. p. 11.
SOUTH MEXICO (*Jurgensen*). Hb. Kew.

2. **Gomphia mexicana,** Humb. et Bonpl. Pl. Æquin. ii. p. 21, t. 74.
SOUTH MEXICO, between Acapulco and Chilpancingo (*Humboldt & Bonpland*).

3. **Gomphia magdalenæ,** Tr. et Pl.? in Ann. Sc. Nat. série iv. p. 273.
BRITISH HONDURAS, Belize (*Marsh,* 1913).—COLOMBIA. Hb. Kew.

4. **Gomphia nitida,** Sw. Fl. Ind. Occ. ii. p. 739.
PANAMA, in dark forests near Cruces, Gorgona, and Chagres (*Seemann,* 547), Chagres (*Fendler,* 303).—JAMAICA, ANTIGUA, and TRINIDAD. Hb. Kew.

5. **Gomphia,** sp. (*G. nitidæ,* var.?)
PANAMA, Lion-Hill railway-station (*S. Hayes,* 540). Hb. Kew.

Tribe LUXEMBERGIEÆ.

Exclusively American, and comprising six genera and eighteen species, with one exception confined to Tropical South America.

2. CESPEDESIA.

Cespedesia, Goudot in Ann. Sc. Nat. série 3, ii. p. 369; Benth. et Hook. Gen. Plant. i. p. 320.

Four species, lofty trees, inhabiting Peru and Colombia.

1. **Cespedesia macrophylla,** Seem. Bot. Voy. 'Herald,' p. 97.

PANAMA, without locality (*S. Hayes*).—COLOMBIA. Hb. Kew.

Order XXXIV. BURSERACEÆ.

Burseraceæ, Benth. et Hook. Gen. Plant. i. p. 321.

About twenty genera, comprising 150 arboreous and shrubby species, inhabiting the tropics of both hemispheres.

Tribe BURSEREÆ.

1. BURSERA.

Bursera, Linn. Gen. Plant. n. 440; Benth. et Hook. Gen. Plant. i. p. 324.

About forty species, with few exceptions American; one occurs in the East Indies. Bentham and Hooker (*l. c.*) unite *Icica* and *Elaphrium* with *Bursera*; but as the species require revision, we have not ventured to give specific names under *Bursera.* Doubtless many of the following numbers belong to the same species.

1. **Bursera gummifera,** Linn. Sp. Pl. p. 471; Jacq. Amer. t. 65.

FLORIDA.—SOUTH MEXICO, near Tantoyuca (*Ervendberg*), Papantla (*Schiede & Deppe*), Hacienda de la Laguna (*Schiede*); PANAMA, isle of Taboga (*Seemann,* 1653).—Also common in the WEST INDIES. Hb. Kew.

2. **Bursera microphylla,** A. Gray, in Proc. Am. Acad. v. p. 155.

NORTH MEXICO, in the Sierra Tula, Sonora (*Schott*).

3. **Bursera obovata,** Turcz. in Bull. Soc. Nat. Mosc. 1863, i. p. 613.

MEXICO, Orizaba (*Botteri,* 912).

4. **Bursera,** sp.

SOUTH MEXICO, Cordova (*Dr. Finck*). Hb. Kew.

5. **Bursera,** sp.

SOUTH MEXICO, Tehuacan, 5500 feet (*Galeotti,* 4008). Hb. Kew.

6. **Bursera,** sp.

SOUTH MEXICO, mountains near Guadalupe (*Bourgeau,* 518). Hb. Kew.

7. **Bursera,** sp.
SOUTH MEXICO, Guadalupe (*Bourgeau*, 338; *Bilimek*, 857). Hb. Kew.

8. **Bursera?,** sp.
SOUTH MEXICO (*Hahn*). Hb. Kew.

9. **Bursera?,** sp.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 2237). Hb. Kew.

10. **Bursera,** sp.
GUATEMALA (*Friedrichsthal*). Hb. Kew.

11. **Bursera,** sp.
SOUTH MEXICO, Leon (*Hartweg*). Hb. Kew.

12. **Bursera,** sp.
SOUTH MEXICO, Vera Cruz (*Linden*, 732; *Schiede*, 716), ravines at 3000 feet (*Galeotti*, 3513), valley of Cordova (*Bourgeau*, 2058). Hb. Kew.

13. **Bursera,** sp.
NICARAGUA, Chontales (*Tate*, 268). Hb. Kew.

Published under ICICA.

14. **Icica copal,** Rich. Fl. Cub. t. 37.
SOUTH MEXICO, near Tantoyuca (*Ervendberg*, 185).—North part of SOUTH AMERICA and the WEST INDIES.

15. **Icica leptostachya,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 473.
SOUTH MEXICO, in woods near Vera Cruz (*Galeotti*, 3493).

16. **Icica serrata,** DC. Prodr. ii. p. 77.
MEXICO, without locality (*Moçino & Sessé*).

Published under ELAPHRIUM.

17. **Elaphrium aloexylon,** Schiede, ex Schl. in Linnæa, xvii. p. 252.
Amyris Linanoe, Llave ex Schiede.
SOUTH MEXICO, Real de Huantla &c. (*Schiede*).

18. **Elaphrium? ariense,** H. B. K. Nov. Gen. et Sp. vii. p. 31.
SOUTH MEXICO, between Pazcuaro and Volcan de Jorullo, near Ario (*Humboldt & Bonpland*).

19. **Elaphrium bicolor,** Willd. ex Schl. in Linnæa, xvii. p. 625.
SOUTH MEXICO, Real de Huantla to San Francisco de Jetecala (*Schiede*).

20. **Elaphrium copalliferum,** DC. Prodr. i. p. 724; Calques des Dess. Fl. Mex. 202 et xxx. B.

Mexico, without locality (*Moçino & Sessé*).

21. **Elaphrium crenatum,** Schl. in Linnæa, xvii. p. 629.

South Mexico, near Zamaliztlahuaca and at Iquala (*Schiede*).

22. **Elaphrium excelsum,** H. B. K. Nov. Gen. et Sp. vii. p. 30, t. 611.

South Mexico, between Acapulco and Vento del Exido (*Humboldt & Bonpland*).

23. **Elaphrium fagaroides,** H. B. K. Nov. Gen. et Sp. vii. p. 27, t. 611.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 108), South Mexico, near Queretaro, 6000 feet (*Humboldt & Bonpland*).

Schlechtendal (Linnæa, xvii.) distinguishes varieties α, β, and γ in Schiede's collection, and refers *Amyris ventricosa*, La Llave, to the latter.

24. **Elaphrium glabrifolium,** Jacq. ex H. B. K. Nov. Gen. et Sp. vii. p. 28.

South Mexico, Volcan de Jorullo (*Humboldt & Bonpland, Schiede*), San Francisco, Jetecala (*Schiede*).

25. **Elaphrium grandifolium,** Schl. in Linnæa, xvii. p. 249.

South Mexico, in the warm region (*Schiede*).

26. **"Elaphrium graveolens,** K." Hb. Kew.

North Mexico, west coast (from *Mr. Piesse*, "Sinaloe tree"). Hb. Kew.

27. **Elaphrium jorullense,** H. B. K. Nov. Gen. et Sp. vii. p. 28, t. 612.

South Mexico, near Agua Sarco, and at the foot of the Volcan de Jorullo (*Humboldt & Bonpland*), Reale de Huantla, Yguala, and San Francisco de Jetecala (*Schiede*).

28. **Elaphrium lancifolium,** Schl. in Linnæa, xvii. p. 247.

Var. α et β, South Mexico, in the warm region (*Schiede*).

29. **Elaphrium ? lanuginosum,** H. B. K. Nov. Gen. et Sp. vii. p. 31.

South Mexico, near the village of Cuernavaca (*Humboldt & Bonpland*).

30. **Elaphrium ovalifolium,** Schl. in Linnæa, xvii. p. 248.

South Mexico, without any special locality (*Schiede*).

31. **Elaphrium penicillatum,** DC. Prodr. i. p. 724; Calques des Dess. Fl. Mex. 203 et xxx. C.

Mexico, without locality (*Moçino & Sessé*).

32. **Elaphrium pubescens,** Schl. in Linnæa, xvi. p. 527.

Amyris pubescens, Hb. Willd.

South Mexico, Campeche.

33. **Elaphrium simplicifolium,** Schl. in Linnæa, xvi. p. 532.
SOUTH MEXICO, without any special locality (*Schiede*).

34. **Elaphrium "torulosum,"** in hb. Kew.
Rhus potentillæfolium, Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 469.
SOUTH MEXICO, cactiferous rocks, Tehuacan, Oaxaca, at 5500 feet (*Galeotti*, 4006; *Andrieux*, 466). Hb. Kew.

2. HEDWIGIA.

Hedwigia, Swartz, Fl. Ind. Occ. ii. p. 670; Benth. et Hook. Gen. Plant. i. p. 326.

There are four or five arboreous species of this genus, natives of the northern part of South America and the West-Indian Islands.

1. **Hedwigia balsamifera,** Sw. Fl. Ind. Occ. ii. p. 670, t. 13.
PANAMA, Rio-Grande railway-station (*S. Hayes*, 342).—TRINIDAD; and, according to Tussac, it occurs in nearly all the WEST-INDIAN ISLANDS. Hb. Kew.

2. **Hedwigia? mexicana,** DC. Prodr. ii. p. 80; Calques des Dess. Fl. Mex. 204.
MEXICO, without locality (*Moçino & Sessé*).

Tribe AMYRIDEÆ.

The tribe is limited to the following genus, which is peculiar to the West Indies and Tropical America:—

3. AMYRIS.

Amyris, Linn. Gen. Plant. n. 473; Benth. et Hook. Gen. Plant. i. p. 327.

About twelve species of shrubs and trees.

1. **Amyris? bipinnata,** DC. Prodr. ii. p. 82; Calques des Dess. Fl. Mex. 197.
MEXICO, without locality (*Moçino & Sessé*).

2. **Amyris? tecomaca,** DC. Prodr. ii. p. 82; Calques des Dess. Fl. Mex. 195.
MEXICO, without locality (*Moçino & Sessé*).

3. **Amyris thyrsiflora,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 475.
SOUTH MEXICO, Zacuapan (*Linden*, 77), Vera Cruz, ravines at 3000 feet (*Galeotti*, 2822), Jalapa (*Galeotti*, 7018). Hb. Kew.

4. **Amyris,** sp.
NORTH MEXICO, Monterey (*Eaton & Edwards*, 77). Hb. Kew.

Order XXXV. MELIACEÆ.

Meliaceæ, Benth. et Hook. Gen. Plant. i. p. 327; C. De Candolle, Monogr. Phan. vol. i.

Trees or shrubs, very rarely herbaceous. About 270 species, according to Bentham and Hooker, referred to thirty-seven genera. Natives of warm countries, and most numerous in Asia and America.

Tribe MELIEÆ.

This tribe is not represented in America by any indigenous species; but *Melia azedarach*, Linn., is commonly cultivated, and is naturalized in some parts, as in the valley of Cordova (*Bourgeau*, 2055).

Tribe TRICHILIEÆ.

1. GUAREA.

Guarea, Linn. Mant. 1305; Benth. et Hook. Gen. Plant. i. p. 335.

The genus, with one exception, is confined to America, and is estimated by Bentham and Hooker to consist of about thirty species, which are mostly trees. C. De Candolle, in Monogr. Phan. i. pp. 542–579, describes seventy species.

1. **Guarea bijuga,** C. DC. in Monogr. Phan. i. p. 567.

? *G. kegelii*, Turcz., infra.

GUATEMALA (*Skinner*). Hb. Kew.

2. **Guarea brachystachya,** DC. Prodr. i. p. 624; Calques des Dess. Fl. Mex. 155.

MEXICO or CENTRAL AMERICA?

3. **Guarea filiformis,** C. DC. in Monogr. Phan. i. p. 566.

SOUTH MEXICO, Oaxaca (*Jurgensen*, 199).—And in PERU.

Var. β. **pallida,** C. DC. *l. c.*

SOUTH MEXICO, Cuernavaca (*Bourgeau*, 1197); NICARAGUA, between Sapua and Tortuga (*Ærsted*). Hb. Kew.

4. **Guarea fulva,** Tr. et Pl. in Ann. Sc. Nat. série 5, v. p. 370.

Var. β. **mexicana,** C. DC. in Monogr. Phan. i. p. 575.

Sapindus glabrescens, Hook. et Arn.

SOUTH MEXICO, without locality (*Beechey*). Hb. Kew.

5. **Guarea hirsuta,** C. DC. in Monogr. Phan. i. p. 578.

NEW SPAIN (*Pavon*, in Hb. Boiss.).

6. **Guarea hoffmanniana,** C. DC. in Monogr. Phan. i. p. 570.

Costa Rica (*Hoffmann*, 755).

7. **Guarea humilis,** Bertero, in DC. Prodr. i. p. 624.

Guarea excelsa, H. B. K. Nov. Gen. et Sp. vii. p. 227.

South Mexico, Acapulco and Zumpango, at 3000 feet (*Humboldt & Bonpland*), virgin forest of Potrero (*Hahn*).—Also in Porto Rico and Martinique. Hb. Paris.

8. **Guarea kegelii,** Turcz. in Bull. Soc. Nat. Mosc. 1863, i. p. 589. = *G. bijuga*, C. DC. supra.

Guatemala (*Kegel*).

9. **Guarea trichilioides,** Linn. Mant. p. 228.

Guarea aubletii, A. Juss.

Panama (*S. Hayes*).—West Indies to Brazil and Peru. Hb. Kew.

2. TRICHILIA.

Trichilia, Linn. Gen. Plant. n. 528; Benth. et Hook. Gen. Plant. i. p. 337.

About thirty species, according to Bentham and Hooker, chiefly Tropical-American, about five occurring in Africa. C. De Candolle, in Monogr. Phan. i. pp. 646–713, describes 111 species.

1. **Trichilia havanensis,** Jacq. Am. p. 129, t. 175. fig. 38.

Moschoxylon cuneatum, Turcz.

Moschoxylon veraguense, Seem.

South Mexico, Vera Cruz (*Galeotti*, 3494; *F. Müller*, 278 and 945), Orizaba (*Botteri*, 972; *Bourgeau*, 1575, 1473, and various other collectors, without numbers or localities); Guatemala, Barranca of Zunila (*Skinner*), Volcan de Fuego (*Salvin*); Costa Rica (*Endres*), outskirts of gardens (*Polakowsky*); Panama, Chiriqui (*Seemann*).—North part of South America and the West Indies. Hb. Kew.

Var. β. **lanceolata,** C. DC. in Monogr. Phan. i. p. 677.

South Mexico, Mirador (*Linden*, 773), Cordova (*Botteri*, 939 and 950); Guatemala, Dueñas (*Salvin & Godman*); Costa Rica, San José (*Œrsted*). Hb. Kew.

Var. γ. **multijuga,** C. DC. *l. c.*

Panama, Boquete (*Seemann*). Hb. Kew.

2. **Trichilia karwinskiana,** C. DC. in Monogr. Phan. i. p. 663.

Mexico (*Karwinski*, 1150). Hb. Petrop.

3. **Trichilia œrstediana,** C. DC. in Monogr. Phan. i. p. 677.

Nicaragua (*Œrsted*); Guatemala (*Friedrichsthal*). Hb. Kew.

4. **Trichilia oligantha,** C. DC. in Monogr. Phan. i. p. 693.

Mexico (*Karwinsky*). Hb. Petrop.

5. **Trichilia propinqua,** C. DC. in Monogr. Phan. i. p. 693.

Var. β. **cinerascens,** C. DC. *l. c.*

NICARAGUA (*Ærsted*). The type inhabits GUIANA.

6. **Trichilia pallida,** Swartz. Fl. Ind. Occ. p. 733.

Portesia ovata, Cav. Diss. vii. p. 639, t. 215.

WEST INDIES—GUATEMALA, MEXICO (ex *Grisebach*, Fl. Brit. W. Ind. p. 130).

7. **Trichilia schiedeana,** C. DC. in Monogr. Phan. i. p. 664.

SOUTH MEXICO, near Vera Cruz (*Schiede*). Hb. Berol.

8. **Trichilia spondioides,** Swartz, Fl. Ind. Occ. p. 730; Refug. Bot. t. 293.

SOUTH MEXICO, Misantla (*Schiede & Deppe*), Vera Cruz (*Gouin*), Oaxaca (*Galeotti*, 3499).—Widely spread in the northern part of SOUTH AMERICA and in the WEST INDIES. Hb. Kew.

9. **Trichilia tuberculata,** C. DC. in Monogr. Phan. i. p. 711.

PANAMA, Empire railway-station (*S. Hayes*, 262). Hb. Kew.

3. CARAPA.

Carapa, Aubl. Pl. Guian. Suppl. p. 33, t. 387; Benth. et Hook. Gen. Plant. i. p. 338.

Trees, about six species, widely dispersed in the tropics.

1. **Carapa nicaraguensis,** C. DC. in Monogr. Phan. i. p. 717.

NICARAGUA, Chontales (*Tate*, 45 and 46). Hb. Kew.

Tribe SWIETENIEÆ.

This tribe is thinly distributed in Tropical Asia, Africa, and America.

4. SWIETENIA.

Swietenia, Linn. Gen. Plant. n. 575; Benth. et Hook. Gen. Plant. i. p. 338.

Two arboreous species, indigenous to Cistropical America and the West-Indian Islands, and one in Western Tropical Africa.

1. **Swietenia humilis,** Zucc. Pl. Nov. fasc. ii. p. 355, t. 7, A et B.

SOUTH MEXICO, on the Pacific coast, in dry rocky places, scarcely 1000 feet above the sea, especially near Tehuantepec (*Karwinski*).

2. **Swietenia mahogani,** Linn. Sp. Pl. p. 271; Jacq. Am. p. 127; Cav. Diss. vii. t. 209; Hook. Bot. Misc. t. 16, 17.

SOUTH MEXICO, Acapulco (*Humboldt & Bonpland*); BRITISH HONDURAS and GUATE-

MALA, forests of the east coast (*Salvin & Godman*); HONDURAS (*Armstrong* and others); NICARAGUA, Realejo (*Sinclair*).—JAMAICA, BAHAMAS, TRINIDAD, CUBA, PERU. Hb. Kew.

Tribe CEDRELEÆ.

This tribe is not represented in Africa.

5. CEDRELA.

Cedrela, Linn. Gen. Plant. n. 277; Benth. et Hook. Gen. Plant. i. p. 339.

A genus of about twelve arboreous species—two Asiatic, one Australian, and the rest American.

1. **Cedrela angustifolia,** DC. Prodr. i. p. 624; Calques des Dess. Fl. Mex. 153.

MEXICO?

2. **Cedrela alternifolia,** Steud. DC. Prodr. i. p. 625.

Cedrus alternifolia, Miller.

SOUTH MEXICO, Campeche.

This is a doubtful species.

3. **Cedrela glaziovii,** C. DC. in Mart. Fl. Bras. fasc. lxxv. t. 65. f. 2.

SOUTH MEXICO, forests of the interior of Yucatan (*Linden*, 890), Papantla (*Schiede*). —WEST INDIES, VENEZUELA and BRAZIL. Hb. Kew.

4. **Cedrela mexicana,** Rœm. Syn. fasc. i. p. 137; =*C. odorata*? vide Ch. et Schl. in Linnæa, v. p. 422.

MEXICO.

5. **Cedrela,** sp.

SOUTH MEXICO, around Oaxaca (*Andrieux*, 483). Hb. Kew.

6. **Cedrela,** sp. (? *C. odorata.*)

NICARAGUA, Chontales (*Tate*, 299). Hb. Kew.

[*Chailletiaceæ.*—No representative of this small order has hitherto been detected in Central America or Mexico. The species are widely dispersed, the genus *Chailletia* being represented in Tropical South America, Tropical Africa, and Asia; one species occurs in Trinidad; and possibly the genus may yet be found to exist, in our country.]

Order XXXVI. OLACINEÆ.

Olacineæ, Benth. et Hook. Gen. Plant. i. p. 312.

Shrubs and trees, inhabiting tropical and subtropical regions, rare in South Africa and Extratropical Australia. About 200 species, belonging to forty-five genera.

Tribe OLACEÆ.

1. XIMENIA.

Ximenia, Linn. Gen. Plant. n. 477; Benth. et Hook. Gen. Plant. i. p. 346.

There are four or five arboreous and shrubby species, including one in South Africa, one in the Pacific islands, and the following.

1. **Ximenia americana,** Linn. Sp. Pl. p. 497.

Ximenia multiflora, Jacq. Am. t. 277. fig. 31.
Ximenia oblonga, Lam. Ill. t. 297. fig. 2.

South Mexico, valley of Cordova (*Bourgeau*, 2232); Panama, on the sea-beach, Pacific coast, very common (*Seemann*, 537).—And southward to Buenos Ayres. Also common in Tropical Asia, Africa, and Australia. Hb. Kew.

2. **Ximenia parviflora,** Benth. Pl. Hartw. p. 7.

North Mexico, Zacatecas (*Hartweg*, 28). Hb. Kew.

3. **Ximenia,** sp.

North Mexico, Sierra Madre (*Seemann*, 2156). Hb. Kew.
Probably an unarmed state of *X. parviflora*.

2. SCHŒPFIA.

Schæpfia, Schreb. Gen. Plant. p. 129; Benth. et Hook. Gen. Plant. i. p. 348.

About twelve shrubby and arboreous species, four of which are Asiatic and the remainder American.

1. **Schœpfia arborescens,** Rœm. et Schultz, DC. Prodr. iv. p. 319.

South Mexico, Mirador (*Liebmann*); San Salvador, port of Acajutla (*S. Hayes*, 462).—Many of the West-Indian Islands and Venezuela. Hb. Kew.

2. **Schœpfia angulata,** Planch. in Hemsl. Diag. Pl. Nov. pars 1, p. 5.

Ramis angulatis, foliis lanceolatis obtusis brevissime petiolatis 1½–2-pollicaribus, pedunculis brevissimis 2–3-floris, floribus sessilibus, corollæ lobis tubum fere æquantibus, ovario biloculari, stylo crasso tubo corollæ æquali.

Frutex glaberrimus, valde ramosus, ramulis angulatis foliosis. *Folia* brevissime petiolata, coriacea, lanceolata, obtusa, 1½–2-pollicaria, venis immersis. *Flores* (lutei, *Linden*) sessiles ad sesquilineam longi, pedunculis axillaribus, 1–2 lin. longis, 2–3-floris. *Corolla* sæpissime (an semper?) 4-loba, lobis ovatis, obtusis, tubum fere æquantibus, medio pone antheras breviter barbatis. *Ovarium* alte 2-loculare, loculis uniovulatis, stylo tubo corollæ æquali, stigmate magno capitato.

South Mexico, Zacuapan, Vera Cruz (*Linden*, 33 and 79), rivulets near Jalapa, at 3000 feet (*Galeotti*, 7059). Hb. Kew.

3. **Schœpfia mexicana,** A. DC. Prodr. xiv. p. 622.

South Mexico, Tlacolola, Oaxaca (*Andrieux*, 345). Hb. Kew.

4. **Schœpfia parvifolia,** Planch. in Hemsl. Diag. Pl. Nov. pars 1, p. 5.

Ramis teretibus, foliis ovato-lanceolatis pollicaribus, pedunculis brevibus axillaribus bi- trifloris, corollæ lobis ovatis quam tubus triplo brevioribus, ovario alte biloculari, stylo crasso quam tubus corollæ dimidio breviore.

Frutex glaberrimus, ramis teretibus virgatis patentibus, parce foliosis. *Folia* breviter petiolata, coriacea, ovato-lanceolata, obtusa, 9–12 lin. longa, costa venisque immersis. *Flores* sessiles, ad 3 lin. longi, pedunculis crassis, 1–2 lin. longis, axillaribus bi- trifloris; corolla 4-loba, lobis ovatis, obtusis, quam tubus triplo brevioribus, pone antheras breviter barbatis. *Ovarium* alte biloculare, loculis uniovulatis, stylo crasso, quam tubus corollæ dimidio breviore, stigmate amplo capitato. *Fructus* ignotus.

South Mexico (*Parkinson*). Hb. Kew.

5. **Schœpfia vacciniiflora,** Planch. in Hemsley, Diag. Pl. Nov. pars 1, p. 5. (Tab. XIV.).

Ramis teretibus, foliis lanceolatis acuminatis 2–2½ poll. longis, pedunculis 9–12 lin. longis 3–6-floris, floribus pedicellatis, corollæ lobis lanceolatis acutis quam tubus triplo brevioribus, stylo crasso quam tubus corollæ dimidio breviore.

Frutex glaberrimus, ramis teretibus valde foliosis. *Folia* subsessilia, coriacea, lineari-lanceolata vel lanceolata, 2–2½-pollicaria, acuminata, obtusiuscula, venis immersis. *Flores* (aurantiaco-coccinei, *Purdie*) pedicellati, ad 4 lin. longi, pedunculis axillaribus 3–6-floris, 9–12 lin. longis. *Corolla* 4–5-loba, lobis ovatis, acutis, quam tubus quadruplo brevioribus, medio pone antheras breviter barbatis. *Ovarium* 2–3-loculare, loculis uniovulatis, stylo crasso quam tubus corollæ dimidio breviore, stigmate amplo capitato. *Fructus* ignotus.

Guatemala, Volcan de Fuego, 7300 feet (*Salvin*).—Venezuela. Hb. Kew.

EXPLANATION OF TAB. XIV.

Portion of plant, nat. size. Fig. 1, a flower enlarged; 2, the same, laid open; 3, vertical section of an ovary; 4, cross section of ditto.

Order XXXVII. ILICINEÆ.

Ilicineæ, Benth. et Hook. Gen. Plant. i. p. 355.

About 150 shrubby and arboreous species, belonging to three genera. They are natives chiefly of Tropical Asia and America, and the north temperate region of the Old World.

1. ILEX.

Ilex, Linn. Gen. Plant. n. 172, et *Prinos,* n. 441; Benth. et Hook. Gen. Plant. i. p. 356.

This genus comprises 145 of the 150 species of the family, generally dispersed, but very rare in Africa and Australia, and absent from North-west America.

1. **Ilex bumelioides,** H. B. K. Nov. Gen. et Sp. vii. p. 71.

Panama (*Duchassaing*).—Peru.

2. **Ilex condensata,** Turcz. in Bull. Soc. Nat. Mosc. 1859, i. p. 277.

South Mexico, Orizaba (*Botteri*, 994). Hb. Kew.

3. **Ilex discolor,** Hemsley, Diag. Pl. Nov. pars 1, p. 5.

Fruticosa, novellis puberulis, foliis discoloribus breviter petiolatis coriaceis oblongo-ellipticis utrinque rotundatis calloso-serrulatis circiter sesquipollicaribus, floribus parvis axillaribus congestis.

Frutex novellis puberulis. *Folia* breviter petiolata, coriacea, oblongo-elliptica, utrinque rotundata, ad sesquipollicaria, calloso-serrulata, subtus cinerea, petiolo ad 2 lin. longo. *Flores* lutei, parvi, in axillis foliorum congesti, breviter pedicellati, pedicellis basi bibracteolatis, bracteolis minutis; calyx 4-lobatus, lobis rotundatis; petala 4 vel sæpius 3, oblonga, apice rotundata, basi breviter cohærentia; stamina 4 vel 3, filamentis petalis basi adhærentibus. *Ovarium* 4-loculare (?), stylo nullo.

South Mexico, Chiapas, barren dry hills of Comitan (*Linden*, 1652). Hb. Kew.

4. **Ilex mexicana,** Black in Hb. Kew.

Pileostegia mexicana, Turcz. in Bull. Soc. Nat. Mosc. 1859, i. p. 276.

South Mexico, Orizaba (*Botteri*, 998). Hb. Kew.

5. **Ilex occidentalis,** Macf. in Griseb. Fl. Brit. W. Ind. p. 147.

Panama, Mount Lancon, near the city of Panama (*Seemann*, 554).—Jamaica; Dominica. Hb. Kew.

6. **Ilex tolucana,** Hemsley, Diag. Pl. Nov. pars 1, p. 5.

Fruticosa glaberrima, foliis breviter petiolatis coriaceis lanceolatis obtusis 2–4-pollicaribus calloso-serrulatis, floribus numerosissimis in axillis foliorum congestis.

Frutex totus glaberrimus, ramis teretibus. *Folia* breviter petiolata, coriacea, lanceolata, 2–4-pollicaria, obtusa, calloso-serrulata, supra nitida, petiolo sesquilineam longo. *Flores* numerosissimi, subumbellati, pedicellati, pedunculis pedicellisque brevibus; calyx 4-lobatus, lobis rotundatis; petala 4, orbiculari-cucullata, basi cohærentia; stamina 4, filamentis quam antheræ brevioribus. *Ovarium* 4-loculare, stigmate sessili.

South Mexico, Toluca (*Andrieux*, 260). Hb. Kew.

7. **Ilex,** sp.

South Mexico (*Jurgensen*, 739). Hb. Kew.

Order XXXVIII. CELASTRINEÆ.

Celastrineæ, Benth. et Hook. Gen. Plant. i. p. 357.

Shrubs or trees, about 400 species, belonging to forty genera, generally dispersed, with the exception of frigid regions.

Tribe CELASTREÆ.

1. EUONYMUS.

Euonymus, Linn. Gen. Plant. n. 271; Benth. et Hook. Gen. Plant. i. p. 360.

About fifty species are known, most numerous in the mountains of India and in North-eastern Asia; a few in the Malayan islands, one in Australia, and several North-American, apparently absent from Tropical and South Africa and South America and the West Indies.

1. **Euonymus acuminatus,** Benth. Pl. Hartw. p. 59.

South Mexico, plain called Llano Verde (*Hartweg*, 452). Hb. Kew.

2. **Euonymus mexicanus,** Benth. Pl. Hartw. p. 36.

South Mexico, mountains near Huasco (*Hartweg*, 279), Mineral del Monte to Rancho del Paso and Omitlan (*Ehrenberg*). Hb. Kew.

3. **Euonymus parviflorus,** Hemsley, Diag. Pl. Nov. pars 1, p. 6.

Fruticosus, glabrescens, ramulis gracilibus, foliis vix coriaceis breviter petiolatis lanceolatis acuminatis acutis, floribus parvis cymosis, cymis 6–12-floris pedunculatis.

Frutex glabrescens, ramosissimus, ramulis gracilibus, subquadrangulatis. *Folia* fere membranacea, glabra, breviter petiolata, lanceolata vel elliptico-lanceolata, 2–3-pollicaria, longe acuminata, acuta, remote et obscure serrulata, petiolo 2–3 lin. longo. *Flores* tetrameri, cymosi, graciliter pedicellati, minus quam sesquilineari diametro; cymæ axillares pedunculatæ, 6–12-floræ, pedunculis gracilibus, 6–19 lin. longis, pedicellis 1–2 lin. longis; calyx puberulus, lobis rotundatis; petala orbicularia, undulata, in unguiculum brevem abeuntia; discus crassus, 4-lobatus; stamina intra discum inserta. *Ovarium* 4-loculare?, stylo brevi, stigmate capitato.

Nicaragua, Chontales (*Tate*, 292). Hb. Kew.

4. **Euonymus,** sp.

South Mexico, near Tantoyuca (*Ervendberg*, 139).

2. CELASTRUS.

Celastrus, Linn. Gen. Plant. n. 270; Benth. et Hook. Gen. Plant. i. p. 364.

About twenty species, most numerous in the mountains of India and in China and Japan, a few Australian and North-American. Bentham and Hooker subsequently (*l. c.* p. 997) united *Gymnosporia* with *Celastrus*, thus adding upwards of fifty Old-World species.

1. **Celastrus? aphyllus,** Schl. in Linnæa, xv. p. 458.

? *Colletia multiflora,* D.C.

Mexico, near Jacualtepan (*Ehrenberg*).

2. **Celastrus mexicanus,** DC. Prodr. ii. p. 8; Calques des Dess. Fl. Mex. 165.

Mexico, without locality (*Moçino & Sessé*).

3. ZINOWIEWIA.

Zinowiewia, Turcz. in Bull. Soc. Nat. Mosc. 1859, i. p. 275; Benth. et Hook. Gen. Plant. i. p. 364.

Limited to this one shrubby species:—

1. **Zinowiewia integerrima,** Turcz. in Bull. Soc. Nat. Mosc. 1859, i. p. 275.
South Mexico, Jalapa (*Galeotti*, 4320 and 7017), Vera Cruz (*Linden*, 30), Orizaba (*Botteri*, 940). Hb. Kew.

4. MAYTENUS.

Maytenus, Feuill. ex Juss. Gen. Plant. p. 449; Benth. et Hook. Gen. Plant. i. p. 364.

A genus of about fifty species, dispersed in America from Mexico southward into the temperate regions.

1. **Maytenus phyllanthoides,** Benth. Bot. Voy. Sulph. p. 54.
Tricerma crassifolius, Liebm.

South Florida, Lower California.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 110); South Mexico, Tehuacan (*Liebmann, Galeotti*, 9156). Hb. Kew.

2. **Maytenus repandus,** Turcz. in Bull. Soc. Nat. Mosc. 1858, p. 451.
South Mexico, Chinantla, Oaxaca (*Galeotti*, 2880). Hb. Kew.

3. **Maytenus trichotomus,** Turcz. in Bull. Soc. Nat. Mosc. 1858, p. 451.
South Mexico, pine-forests of Titotol, Chiapas (*Linden*, 1640). Hb. Kew.

4. **Maytenus,** sp.
South Mexico, Totutla, Vera Cruz (*Linden*, 64). Hb. Kew.

5. **Maytenus,** ? sp.
Mexico (*Hahn*). Hb. Kew.

6. **Maytenus,** ? sp.
Nicaragua, Chontales (*Tate*, 335). Hb. Kew.

5. MYGINDA.

Myginda, Linn. Gen. Plant. n. 178; Benth. et Hook. Gen. Plant. i. p. 366.

About eight species, restricted to America, ranging from Mexico to Chili.

1. **Myginda latifolia,** Sw. Fl. Ind. Occ. i. p. 342.
South Mexico, Tecoluta (*Schiede & Deppe*).—Jamaica, Cuba, Guadaloupe.

2. **Myginda uragoga,** Jacq. Amer. p. 24, t. 16.
Myginda coccinea, Turcz.

Florida.—South Mexico, downs on the Pacific coast, Oaxaca (*Galeotti*, 3498), Plan del Rio (*Schiede & Deppe*).—Cuba, Jamaica. Hb. Kew.

6. SCHÆFFERIA.

Schæfferia, Jacq. Stirp. Amer. p. 259; Benth. et Hook. Gen. Plant. i. p. 367.

An American genus, limited to the species here enumerated, two of which are doubtful.

1. **Schæfferia cuneifolia,** A. Gray, Pl. Wright. i. p. 35.

Texas.—North Mexico, Cerralvo (*Gregg*).

2. **Schæfferia frutescens,** Jacq. Am. p. 259; Karsten, Fl. Colomb. i. t. 91.

Schæfferia? viridescens, DC. Prodr. ii. p. 41; Calques des Dess. Fl. Mex. 166 and v. a.

Florida.—South Mexico, Vera Cruz (*Gouin*).—Also in Colombia and some of the West-Indian Islands. Hb. Kew.

3. **Schæfferia? racemosa,** DC. Prodr. ii. p. 41; Calques des Dess. Fl. Mex. 169 and v. b.

Mexico, without locality (*Moçino & Sessé*).

7. PERROTTETIA.

Perrottetia, H. B. K. Nov. Gen. et Sp. vii. p. 73, t. 622; Benth. et Hook. Gen. Plant. i. p. 367.

A genus of four or five arboreous or shrubby species, limited to America and the Sandwich Islands.

1. **Perrottetia ovata,** Hemsley, Diag. Pl. Nov. pars 1, p. 6.

Arborescens, novellis rufo-puberulis, foliis ovatis valde acuminatis acutis grosse calloso-serratis basi late rotundatis, floribus minutis pedicellatis, panicularum ramulis gracilibus, petalis ciliatis.

Arbor parva, ramis teretibus gracilibus, novellis rufo-puberulis. *Folia* petiolata, membranacea, glabrescentia, ovata, valde acuminata, acuta, 3–5-pollicaria, grosse calloso-serrulata, basi late rotundata, venis transversis conspicuis, petiolo 2–3 lin. longo, stipulis minutis, squamiformibus. *Flores* (masculini tantum visi) albi, minuti, $\frac{1}{2}$ lin. diametro, pedicellati, paniculati; paniculæ axillares laxæ, ramosæ, 2–3-pollicares, ramulis gracilibus, pedicellis filiformibus; calyx 5-dentatus, dentibus minutissimis; petala 5, rotundata, ciliata, quam calycis dens duplo longioribus; stamina 5, antheris bilocularibus, filamentis basi dilatatis, quam petala triplo longioribus.

South Mexico, Jalapa, at 4000 feet (*Galeotti*, 7117), without locality (*Harris*). Hb. Kew.

This species is characterized by broadly ovate leaves, loose panicles, and ciliate nearly circular petals.

2. **Perrottetia quindiuensis,** H. B. K. Nov. Gen. et Sp. viii. p. 75, t. 622.

South Mexico, Izhuatlancillo, near Orizaba (*Bourgeau*, 2827), without exact locality (*Jurgensen*, 585). Hb. Kew.

The typical plant is a native of the States of Colombia.

3. **Perrottetia,** sp.

South Mexico, without exact locality (*Sumichrast*). Hb. Kew.

8. MORTONIA.

Mortonia, A. Gray, Pl. Wright. i. p. 35, et ii. p. 28; Benth. et Hook. Gen. Plant. i. p. 368.

The genus is confined to America; and the following are all the known species.

1. **Mortonia effusa,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 453.

MEXICO (*Berlandier*, 2119).

2. **Mortonia greggii,** A. Gray, Pl. Wright. i. p. 35 in adnot., t. 4.

TEXAS.—NORTH MEXICO, Rinconado &c. (*Gregg*). Hb. Kew.

3. **Mortonia palmeri,** Hemsley, Diag. Pl. Nov. pars alt. p. 24.

Foliis crassis lineari-obovatis vel fere clavatis mucronatis 6–8 lin. longis, floribus dense cymosis, calycis tubo vix costato, lobis rotundatis cuspidatis late diaphano-scariosis, petalis fere orbicularibus integris, fructibus oblongo-cylindricis quam calyx duplo longioribus.

Frutex ericoideus, glaberrimus, ramis graciliusculis. *Folia* vix petiolata, conferta, appressa, crassa, lineari-obovota vel fere clavata, 6–8 lin. longa, mucronata, margine recurvo. *Flores* parvi, albi, ad apices ramulorum dense cymosi, basi bibracteolati, cum pedicellis breviusculis articulati; cymæ paucifloræ, pedunculis compressis, bracteis bracteolisque minutis; calycis tubus vix costatus, lobi rotundati, cuspidati, late diaphano-scariosi; petala fere orbicularia, integra, vix 1 lin. diametro. *Fructus* oblongo-cylindricus, stylo indurato coronatus, 2–2½ lin. longus.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 109). Hb. Kew.

4. **Mortonia scabrella,** A. Gray, Pl. Wright. ii. p. 28.

TEXAS.—NORTH MEXICO, Sonora (*Thurber*), near San Pedro (*Wright*), mountains of El Paso and Chihuahua, opposite San Elceario (*Parry & Bigelow*). Hb. Kew.

9. GLOSSOPETALON.

Glossopetalon, A. Gray, Pl. Wright. ii. p. 29; Benth. et Hook. Gen. Plant. i. p. 368.

The only species.

1. **Glossopetalon spinescens,** A. Gray, Pl. Wright. ii. p. 29, t. 12.

TEXAS, UTAH, &c. to—NORTH MEXICO, mountains of Chihuahua (*Bigelow*). Hb. Kew.

10. WIMMERIA.

Wimmeria, Schl. in Linnæa, vi. p. 427; Benth. et Hook. Gen. Plant. i. p. 369.

A Mexican genus of five described species.

1. **Wimmeria concolor,** Ch. et Schl. in Linnæa, vi. p. 428; nec Hook. Ic. Pl. iv. t. 356.

NORTH MEXICO, San Luis Potosi to Tampico (*Palmer*, 1041); SOUTH MEXICO, near Colipa (*Schiede & Deppe*). Hb. Kew.

2. **Wimmeria confusa,** Hemsley, Diag. Pl. Nov. pars 1, p. 6.

Wimmeria pallida, Radlk.

Glabra, ramis erectis rigidis, foliis subsessilibus vix coriaceis lineari-lanceolatis ovatis obovatisve obtusis vel subacutis calloso-crenatis, ramulorum lateralium brevissimorum crebris, pedunculis axillaribus subtrifloris, floribus 5–6 lin. diametro.

Frutex (?) glaber, ramis erectis teretibus rigidis, ramulis lateralibus floriferis sæpissime brevibus. *Folia* præcipue in ramulis brevibus lateralibus crebra vel fere fasciculata, vix petiolata, sed deorsum valde attenuata, subcoriacea, lineari-lanceolata, elliptica, ovata vel obovata in eodem ramulo 6-lin. ad bipollicaria, obtusa vel acuta, calloso-crenulata. *Flores* 5–6 lin. diametro, in cymas pedunculatas axillares subtrifloras foliis breviores dispositi, pedunculis pedicellisque gracilibus subæquilongis, pedicellis basi parvibracteolatis; sepala brevia, late rotundata, integra, non membranacea; petala obovata, staminibus æquilonga. *Ovarium* glabrum, pyramidato-trialatum, 3-loculare, loculis pluriovulatis, stylo brevi, stigmate obscure trilobo. *Fructus* ignotus.—*W. concolor,* Hook. Ic. Pl. iv. t. 356, nec Ch. et Schl.

South Mexico, Aguas Calientes (*Hartweg*, 41). Hb. Kew.

Mr. Bentham originally determined these specimens to be *W. concolor*; but afterwards, in a note in Hb. Kew., recorded that he believed this to be an error, and that Hartweg's plant belonged to a new species. We have not seen authentic specimens of *W. concolor*; but, according to the description, it differs from the present species in having slender flexible branches, distinctly petiolate leaves with an inflexed margin, and in the flowers being scarcely 3 lines in diameter.

3. **Wimmeria discolor,** Ch. et Schl. in Linnæa, vi. p. 428.

South Mexico, Vera Cruz (*Linden*, 801), Mirador, 3000 feet (*Heller*), Orizaba (*Botteri*, 877), in woods, Papantla (*Schiede & Deppe*). Hb. Kew.

4. **Wimmeria persicifolia,** Radlk. in Sitzungsb. Münch. Akad. 1878, p. 379.

South Mexico, Ejutla (*Liebmann*).

5. **Wimmeria pubescens,** Radlk. in Sitzungsb. Münch. Akad. 1878, p. 378.

South Mexico, Consoquitla (*Liebmann*).

Tribe HIPPOCRATEÆ.

[Bentham and Hooker, *l. c.*, refer all the species of this tribe to the two genera *Hippocratea* and *Salacia*, both having a wide range of distribution in tropical countries; but Mr. Miers (Linn. Trans. xxviii.) makes no fewer than sixteen genera, besides largely increasing the number of species. Planchon and Triana (Ann. Sc. Nat. série 5, vol. xvi. p. 370 &c.) propose another genus. There can be no doubt, we think, with complete material, characters will be found for some new genera; but not being able to decide upon the merits of what has been done by the writers named, we keep the species in the genera as we find them at Kew, with the names under which they have been published by Miers and others.]

11. HIPPOCRATEA.

Hippocratea, Linn. Gen. Plant. n. 54; Benth. et Hook. Gen. Plant. i. p. 369.

Small trees or climbing shrubs. Upwards of sixty species, dispersed in the tropical regions of Asia, Australia, Africa, and America.

1. **Hippocratea acapulcensis,** H. B. K. Nov. Gen. et Sp. v. p. 136.
Tontelea hookeriana, Miers.

South Mexico, Acapulco (*Humboldt & Bonpland, Lay & Collie*). Hb. Kew.

2. **Hippocratea acutiflora,** DC. Prodr. i. p. 568.

Mexico (*Sessé*). Hb. Mus. Brit.

3. **Hippocratea celastroides,** H. B. K. Nov. Gen. et Sp. v. p. 136.

South Mexico, near Venta del Estola (*Humboldt & Bonpland*), without special locality (*Pavon*). Hb. Mus. Brit.

4. **Hippocratea elliptica,** H. B. K. Nov. Gen. et Sp. v. p. 138.

South Mexico, between Tepecacuilco and Tasco, 5490 feet (*Humboldt & Bonpland*), without habitat (*Pavon*). Hb. Mus. Brit.

5. **Hippocratea excelsa,** H. B. K. Nov. Gen. et Sp. v. p. 139.

South Mexico, between Acapulco and Mazatlan (*Bonpland*); Panama, Veraguas (*Hinds*). Hb. Kew.

6. **Hippocratea integrifolia,** Seem. Bot. Voy. 'Herald,' p. 90, nec Rich. ex Miers.
Cuervea latifolia, Miers in Trans. Linn. Soc. xxviii. p. 372.
Romualdea malpighifolia, Pl. et Tr.

Panama, island of Coiba (*Seemann*, 643). Hb. Kew.

Also in Colombia, taking Planchon and Triana's view of the species (Ann. Sc. Nat. sér. 5, vol. xvi. p. 371).

7. **Hippocratea obcordata,** Lamk. Ill. i. p. 100, t. 28. fig. 1.
Hippocratea scandens, Jacq.

South Mexico, near Tasco (*Humboldt & Bonpland*); Panama (*Duchassaing*).—West Indies, Guiana, Colombia, Peru.

8. **Hippocratea ovata,** Lamk. Ill. i. p. 100, t. 28. fig. 2.

Panama, Aspinwall (*S. Hayes*, 595).—Porto Rico. Hb. Kew.

9. **Hippocratea**
Tyloderma præcelsa, Miers in Trans. Linn. Soc. xxviii. p. 414.

Panama, in dense woods, Lion-Hill railway-station (*S. Hayes*, 708). Hb. Kew.

10. **Hippocratea**

Sicyomorpha pruinosa, Miers in Trans. Linn. Soc. xxviii. p. 411.
Salacia pruinosa, Seem.

PANAMA, Tapitra (*Seemann*, 1219), borders of swamps near the city of Panama (*S. Hayes*, 652). Hb. Kew.

11. **Hippocratea serrulata,** Miers in Trans. Linn. Soc. xxviii. p. 344.

PANAMA, Chagres (*Fendler*, 53)—to PERU and NORTH BRAZIL. Hb. Kew.

12. **Hippocratea**

Prionostemma setulifera, Miers in Trans. Linn. Soc. xxviii. p. 359.

GUATEMALA (*Friedrichsthal*). Hb. Kew.

13. **Hippocratea**

Pristimera tenella, Miers in Trans. Linn. Soc. xxviii. p. 365.

SOUTH MEXICO, San Blas to Guadalaxara (*Coulter*, 851), near Oaxaca (*Galeotti*, 7154). Hb. Kew.

14. **Hippocratea uniflora,** DC. Prodr. i. p. 567 ; Calques des Dess. Fl. Mex. 141.

Hippocratea mexicana, Miers.

SOUTH MEXICO, on the Pacific coast, not far from Tehuantepec, Oaxaca (*Andrieux*, 499). Hb. Kew.

15. **Hippocratea versicolor,** Miers, in Trans. Linn. Soc. xxviii. p. 350.

Hippocratea discolor, Seem. nec Mey.

PANAMA (*Seemann*). Hb. Kew.

12. SALACIA.

Salacia, Linn. Mant. p. 293 ; Benth. et Hook. Gen. Plant. i. p. 370.

Small trees or shrubs. Sixty or seventy species, generally dispersed in the tropics, though absent from Australia and Central America, with the exception of the species which we give on the authority of Grisebach.

1. **Salacia scandens,** Griseb. Fl. Brit. W. Ind. p. 148.

Tontelea, Aubl.

PANAMA.—TRINIDAD, GUIANA. Hb. Kew.

13. LLAVEA.

Llavea, Liebm. in Vidensk. Meddel. 1853, p. 95 ; Benth. et Hook. Gen. Plant. i. p. 370.

This genus is endemic in Mexico.

1. **Llavea integrifolia,** Hemsley, Diag. Pl. Nov. pars 1, p. 6.

Fruticosa sericeo-pubescens, foliis petiolatis oblongis integerrimis, floribus numerosissimis pedicellatis in fasciculos terminales et axillares dispositis, stylis brevibus.

Frutex erectus, ramosus, ramulis rectis. *Folia* conferta, petiolata, lineari-oblonga, ad pollicaria,

obtusa, integerrima, subtus lanata, supra pubescentia; calyx persistens, parvus, pubescens, 5-lobus, lobis inæqualibus. *Fructus* trialatus, monospermus, stylis persistentibus brevibus.

South Mexico, Zimapan (*Coulter*, 868). Hb. Kew.

Only fruiting specimens seen; but easily distinguished from *L. viscosa* by its densely hairy entire leaves.

2. **Llavea viscosa,** Liebm. in Vidensk. Meddel. 1853, p. 95.

South Mexico, Acapulco, Puebla, 7000 feet (*Liebmann*). Hb. Kew.

Order XXXIX. RHAMNACEÆ.

Rhamneæ, Benth. et Hook. Gen. Plant. i. p. 371.

Trees or shrubs, very rarely herbaceous. About 450 species and forty genera; widely dispersed in tropical and subtropical regions, and less numerously in temperate regions.

Tribe ZIZYPHEÆ.

1. ZIZYPHUS.

Zizyphus, Juss. Gen. Plant. p. 380; Benth. et Hook. Gen. Plant. i. p. 375.

About fifty shrubby and arboreous species, dispersed all over the tropics, and extending into some subtropical regions.

1. **Zizyphus acuminatus,** Benth. Bot. Voy. Sulph. p. 78.

South Mexico, Acapulco (*Barclay*).

2. **Zizyphus guatemalensis,** Hemsley, Diag. Pl. Nov. pars 1, p. 6.

Fruticosus, præter flores, glaberrimus parce spinosus, ramulis flexuosis, foliis coriaceis petiolatis oblongo-ellipticis utrinque rotundatis apice interdum retusis prominenter trinerviis obscure calloso-crenulatis, floribus parvis pedicellatis subumbellatis, umbellis axillaribus breviter pedunculatis ad 10-floris, ovario biloculari.

Frutex parce spinosus, ramosus, spinis rectis, ramulis gracilibus flexuosis. *Folia* petiolata, coriacea, glaberrima, prominenter trinervia, minute reticulato-venosa, oblongo-elliptica, 2–3-pollicaria, utrinque obtusissima vel rotundata, apice interdum retusa, obscure calloso-crenulata, petiolo 2–3 lin. longo; stipulis minutis, subulatis, deciduis. *Flores* parvi, pedicellati, umbellati, umbellis axillaribus pedunculatis ad 10-floris, pedunculis 2–3 lin. longis, pedicellis calycibusque pubescentibus, pedicellis 1–1½ lin. longis; calyx 5-lobatus, lobis æquilatere triangularibus apice acutis; petala minuta, cucullata; discus carnosus, accrescens; ovarium biloculare biovulatum, stylo simplici, erecto, stigmate breviter bifido. *Fructus* non visus.

Guatemala (*Skinner*). Hb. Kew.

3. **Zizyphus heteroneurus,** Griseb. in Bonplandia, 1858, p. 3.

Panama (*Duchassaing*).

4. **Zizyphus lycioides,** A. Gray, Pl. Lindh. p. 168, in adnot.

Texas, New Mexico, Arizona to—North Mexico, between Matamoras and Mapimi (*Gregg*). Hb. Kew.

5. **Zizyphus,** sp.

SOUTH MEXICO, Zimapan (*Coulter*, 13). Hb. Kew.

6. **Zizyphus,** sp.

NORTH MEXICO, Monterey (*Eaton & Edwards*, 63). Hb. Kew.

2. CONDALIA.

Condalia, Cav. Ann. Cienc. Nat. i. p. 39, t. 4; Benth. et Hook. Gen. Plant. i. p. 376.

About six shrubby species in the tropical and warm temperate regions of America, both North and South.

1. **Condalia mexicana,** Schl. in Linnæa, xv. p. 471.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 112 and 113); SOUTH MEXICO, Cactus Plains, Oaxaca (*Galeotti*, 7011), near Zimapan (*Schiede*), Barranca de Acholoya (*Ehrenberg*). Hb. Kew.

2. **Condalia spathulata,** A. Gray, Pl. Wright. i. p. 32.

TEXAS.—NORTH MEXICO, Sonora (*Schott*), sides of a cañon on the San Pedro, Sonora, (*Wright*), San Luis Potosi to San Antonio (*Parry*, 111). Hb. Kew.

3. MICRORHAMNUS.

Microrhamnus, A. Gray, Pl. Wright. i. p. 34; Benth. et Hook. Gen. Plant. i. p. 376.

The only species described, a dwarf shrub.

1. **Microrhamnus ericoides,** A. Gray, Pl. Wright. i. p. 34.

TEXAS, NEW MEXICO to—NORTH MEXICO, dry plains near Parras (*Gregg*).

4. KARWINSKIA.

Karwinskia, Zucc. Nov. Stirp. fasc. i. p. 349, t. 16; Benth. et Hook. Gen. Plant. i. p. 377.

Shrubs and small trees. The following enumeration includes all the species of the genus:—

1. **Karwinskia affinis,** Schl. in Linnæa, xv. p. 460.

? *Rhamnus biniflorus,* Moç. et Sessé, Hook. et Arn. Bot. Beech. Voy. p. 283.

SOUTH MEXICO, Jalisco (*Lay*).

2. **Karwinskia glandulosa,** Zucc. in Flora, 1832, ii. Beibl. p. 71.

TEXAS, NEW MEXICO.—SOUTH MEXICO, plains of Actopan (*Graham*, 130), Oaxaca (*Ghiesbreght*, 65). Hb. Kew.

3. **Karwinskia humboldtiana,** Zucc. Nov. Stirp. i. p. 351.

Rhamnus triflorus, var., Hook. et Arn.

"*Rhamnus humboldtianus,* H. B. K., proxima nisi eadem" (*Schiede*).

Texas, New Mexico, California.—North Mexico, Zacatecas (*Coulter*, 1); South Mexico, Jalisco (*Lay & Collie*), Regla (*Ehrenberg*), Oaxaca (*Galeotti*, 7159), Zimapan (*Coulter*, 2). Hb. Kew.

4. **Karwinskia (?) mollis,** Schl. in Linnæa, xv. p. 461.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 117); South Mexico, Barranca de Santa Maria (*Schiede*). Hb. Kew.

5. **Karwinskia sessilifolia,** Schl. in Linnæa, xv. p. 461.

South Mexico, Hacienda de San Gabriel (*Schiede*).

6. **Karwinskia (?) subcordata,** Schl. in Linnæa, xv. p. 462.

South Mexico, between Ismiquilpan and Zimapan (*Schiede*).

7. **Karwinskia,** sp.

North Mexico, Sonora Alta (*Coulter*, 3). Hb. Kew.

Tribe RHAMNEÆ.

5. RHAMNUS.

Rhamnus, Linn. Gen. Plant. n. 265 (excl. *Zizypho* et *Paliuro*); Benth. et Hook. Gen. Plant. i. p. 377.

A genus of about sixty shrubby and arboreous species, widely dispersed, but none recorded from South Africa, Australia, or Pacific Islands.

1. **Rhamnus biniflorus,** DC. Prodr. ii. p. 26; Calques des Dess. Fl. Mex. 171.

Mexico.

2. **Rhamnus californicus,** Esch. Bot. Calif. i. p. 101.

Rhamnus oleifolius, Hook. Fl. Bor.-Am. i. p. 123, t. 44.
Rhamnus laurifolius, Nutt. in Torr. & Gr. Fl. N. Am. i. p. 260.
Rhamnus tomentellus, Benth. Pl. Hartw. p. 303.
Frangula californica, A. Gray, Gen. Ill. ii. t. 178.

Texas, New Mexico, California.—North Mexico, Sierra Madre (*Seemann*, 2155), Sonora (*Schott*); South Mexico, Vera Cruz (*Virlet d'Aoust*). Hb. Kew.

3. **Rhamnus capreæfolius,** Schl. in Linnæa, xv. p. 464.

South Mexico, Malpays de Naulingo (*Schiede*), Puente de Dios (*Ehrenberg*).

4. **Rhamnus humboldtianus,** Rœm. et Schultz, Syst. Veg. v. p. 295; H. B. K. Nov. Gen. et Sp. vii. t. 608.

South Mexico, near Puente de la Madre de Dios, between Totonilco el Grande and Actopan (*Humboldt & Bonpland*).

5. **Rhamnus microphyllus,** Willd. H. B. K. Nov. Gen. et Sp. vii. p. 51, t. 606.

Fructus *R. macrophylli* nondum descriptus.

Drupa matura baccata, carnosa, 1–2-pyrena; pyrenis osseis, plano-convexis, unispermis. *Semina* sphæroideo-turbinata, compressa, circiter 2½ lineas diametro, atro-fusca, nitida, lævia; albumen tenuissimum; embryo rectus, luteus, cotyledonibus carnosis, plano-convexis, radicula minuta.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 114 and 115); South Mexico, near Real del Monte (*Humboldt & Bonpland*). Hb. Kew.

6. **Rhamnus mucronatus,** Schl. in Linnæa, xv. p. 465.

South Mexico, near Chantla and Anganguio (*Schiede*).

7. **Rhamnus serratus,** Willd. R. et S. Syst. Veg. v. p. 295.

Rhamnus serrulatus, H. B. K. Nov. Gen. et Sp. vii. p. 51, t. 607.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 116); South Mexico, in the plain of Mexico near San Augustin de las Cuevas (*Humboldt & Bonpland*), Chiapas (*Ghiesbreght*, 516), San Angelo (*Schiede*), Santa Fé (*Bourgeau*, 698), Zimapan (*Coulter*, 1496). Hb. Kew.

8. **Rhamnus (?) spinosus,** Hemsley, Diag. Pl. Nov. pars 1, p. 6.

Arborescens, spinosus, strigilloso-furfuraceus, ramulis rigidis, foliis ellipticis obtusis emarginatis, floribus graciliter pedicellatis in axillis foliorum fasciculatis.

Arbor parva, spinosa, novellis plus minusve strigilloso-furfuraceis, ramulis crassis, spinis rigidissimis semipollicaribus. *Folia* petiolata vix coriacea, glabrescentia, elliptica, 2–3-pollicaria, obtusa, emarginata, integerrima, supra glaberrima, nitida, subtus præcipue secus costam nervosque furfuracea, venis insigniter reticulatis, petiolo 3–5 lin. longo. *Flores* pedicellati, numerosi, in axillis foliorum glomerati, pedicellis gracilibus inæquilongis longissimis, usque 9 lin. longis; calyx furfuraceus, 5-lobatus, lobis late ovatis subacutis; petala cucullata, brevissime unguiculata, stamina superantia; discus calycis tubum vestiens; ovarium 3-loculare, stylis connatis. *Fructus* maturus non visus.

Panama (*S. Hayes*, 273). Hb. Kew.

9. **Rhamnus terniflorus,** DC. Prodr. ii. p. 26; Calques des Dess. Fl. Mex. 170.

Mexico.

10. **Rhamnus umbellatus,** Cav. Ic. vi. p. 2, t. 504.

Mexico, near La Grande (*Ehrenberg*), Zimapan? (*Aschenborn*).

11. **Rhamnus,** sp.

South Mexico, Orizaba (*Botteri*, 1020). Hb. Kew.

12. **Rhamnus,** sp.

Mexico, without locality (*Hahn*, 20). Hb. Kew.

13. **Rhamnus,** sp.

South Mexico, region of Orizaba (*Bourgeau*, 2441, 2481, 2495, 2716; *Sallé*, *Hahn*, 22). Hb. Kew.

14. **Rhamnus,** sp.

SOUTH MEXICO, Orizaba (*Botteri*, 943, 1021; *Bilimek*, 357), Orizaba (*Bourgeau*, 2496), Jalapa (*Coulter*, 7; *Galeotti*, 7070). Hb. Kew.

6. CEANOTHUS.

Ceanothus, Linn. Gen. Plant. n. 267; Benth. et Hook. Gen. Plant. i. p. 378.

About thirty species of shrubs and small trees, confined to Temperate North America, Mexico, and Central America. Four occur in the Atlantic States, and the others on the western side of the Rocky Mountains.

1. **Ceanothus azureus,** Desf., DC. Prodr. ii. p. 31; Bot. Reg. t. 291.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 118, 119), Sierra Madre (*Seemann*); SOUTH MEXICO, Popocatepetl, 8000 feet (*Galeotti*, 3554), Zimapan (*Coulter*, 15), between San Angel and San Bartolo, and below La Encarnacion de San José del Oro (*Schiede*), Real del Monte (*Coulter*, 14), Chiapas (*Linden*, 204), without localities (*Graham*, 128; *Jurgensen*, 272; *Parkinson*, *Müller*, *Tate*, and others); GUATEMALA, Volcan de Agua (*Salvin & Godman*). Hb. Kew.

2. **Ceanothus buxifolius,** Willd. ex H. B. K. Nov. Gen. et Sp. vii. p. 62, t. 615.

Colubrina buxifolia, Schl.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 122), in forests in the Sierra Madre (*Seemann*, 2158), San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, Mineral del Monte (*Ehrenberg*), very common in woods, Real del Monte, 8550 feet (*Humboldt & Bonpland*). Hb. Kew.

3. **Ceanothus cæruleus,** Lag. in H. B. K. Nov. Gen. et Sp. vii. p. 63.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, near the city of Mexico (*Humboldt & Bonpland*).

4. **Ceanothus depressus,** Benth. Pl. Hartw. p. 8.

NORTH MEXICO, Zacatecas (*Hartweg*, 29); SOUTH MEXICO, Real del Monte (*Coulter*, 11). Hb. Kew.

5. **Ceanothus glandulosus,** Schl. in Linnæa, xv. p. 474.

SOUTH MEXICO, near Las Trojes (*Schiede*).

6. **Ceanothus greggii,** A. Gray, Pl. Wright. ii. p. 28.

NEW MEXICO.—NORTH MEXICO, Guadalupe Pass, Sonora (*Parry*), San Luis Mountains in the same State (*Smith*), battle-field of Buena Vista (*Gregg*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 120, 121). Hb. Kew.

7. **Ceanothus macrocarpus,** Cav. Ic. iii. t. 270.

SOUTH MEXICO (*Aschenborn*).—"NEW SPAIN" (*Cavanilles*).

8. **Ceanothus moçinianus,** DC. Prodr. ii. p. 32; Calques des Dess. Fl. Mex. 176. MEXICO.

9. **Ceanothus pauciflorus,** DC. Prodr. ii. p. 33; Calques des Dess. Fl. Mex. 175. MEXICO.

7. SAGERETIA.

Sageretia, Brongn. in Ann. Sc. Nat. x. p. 359, t. 13. fig. 2; Benth. et Hook. Gen. Plant. i. p. 379.

About ten shrubby species, inhabiting Central and Southern Asia and North America.

1. **Sageretia elegans,** Brongn. in Ann. Sc. Nat. x. p. 359.

Rhamnus elegans, H. B. K.

SOUTH MEXICO, Vera Cruz (*Galeotti*, 3514; *Linden*, 730).—COLOMBIA; PERU. Hb. Kew.

2. **Sageretia michauxii,** Brongn. Monog. p. 53; Gray, Gen. Ill. ii. t. 266.

Rhamnus minutiflorus, Michx.

FLORIDA; NEW MEXICO to—NORTH MEXICO, Santa Cruz, Sonora (*Wright*); SOUTH MEXICO, without habitat (*Parkinson*). Hb. Kew.

3. **Sageretia,** sp.

SOUTH MEXICO, road to Valladolid (*Graham*, 127). Hb. Kew.

8. COLUBRINA.

Colubrina, L. C. Rich. ex Brongn. in Ann. Sc. Nat. x. p. 368, t. 15. fig. 3; Benth. et Hook. Gen. Plant. i. p. 379.

There are about twelve shrubby species known, chiefly natives of Tropical and Temperate North America. One has a wide distribution in the Tropical and Subtropical regions of the Old World.

1. **Colubrina alamani,** DC. Prodr. ii. p. 31.

Ceanothus alamani, Schl.

SOUTH MEXICO, Papantla (*Schiede & Deppe*), Tampico (*Berlandier*). Hb. Kew.

2. **Colubrina celtidifolia,** Schl. in Linnæa, xv. p. 471.

Ceanothus celtidifolius, Ch. et Schl. in Linnæa, v. p. 602.

SOUTH MEXICO, Jalapa (*Schiede & Deppe*). Hb. Kew.

3. **Colubrina ehrenbergii,** Schl. in Linnæa, xv. p. 469.

SOUTH MEXICO, between Ajuntas and Las Verdosas, and between Amojoque and El Puente de Dios (*Ehrenberg*).

4. **Colubrina glomerata,** Hemsley.

Rhamnus glomeratus, Hook. in Benth. Pl. Hartw. p. 9.

SOUTH MEXICO, near Real del Monte, at 5000 feet (*Galeotti*, 333), Zacatecas (*Hartweg*). Hb. Kew.

5. **Colubrina rufa,** Reiss. in Mart. Fl. Bras. fasc. xxviii. p. 98.

PANAMA, in open woods near the city of Panama (*S. Hayes*, 476).—GUIANA, BRAZIL. Hb. Kew.

6. **Colubrina,** sp.

SOUTH MEXICO, mountains around Oaxaca (*Andrieux*, 470). Hb. Kew.

7. **Colubrina,** sp.

SOUTH MEXICO, Jalapa (*Linden*, 6), Zimapan (*Coulter*, 8). Hb. Kew.

Tribe COLLETIEÆ.

Six genera, comprising about thirty-five species, are included in this tribe. One is a native of Australia and New Zealand; and all the rest are American, chiefly inhabiting Extratropical South America.

9. ADOLPHIA.

Adolphia, Meissn. Gen. Plant. p. 70; Benth. et Hook. Gen. Plant. i. p. 384.

This is the only species; it is a shrub:—

1. **Adolphia infesta,** Meissn. Gen. Pl. p. 70.

Ceanothus infestus, H. B. K.
Colubrina infesta, Schl.

TEXAS; NEW MEXICO; CALIFORNIA; ARIZONA to—NORTH MEXICO, Zacatecas (*Coulter*, 10), Guanajuato (*Hartweg*); SOUTH MEXICO, near Gasave (*Humboldt & Bonpland*), between San Pedro Tlaolipan and Huehuetoca (*Schiede*), plain of Pachuca (*Ehrenberg*). Hb. Kew.

10. COLLETIA.

Colletia, Comm. ex Juss. Gen. Plant. p. 380; Benth. et Hook. Gen. Plant. i. p. 383.

About fifteen species, chiefly leafless shrubs, inhabiting Chili. The following are doubtful plants:—

1. **Colletia? disperma,** DC. Prodr. ii. p. 29; Calques des Dess. Fl. Mex. 173.

MEXICO.

2. **Colletia? multiflora,** DC. Prodr. ii. p. 29; Calques des Dess. Fl. Mex. 174.

MEXICO.

Tribe GOUANIEÆ.

11. GOUANIA.

Gouania, Linn. Gen. Plant. n. 1157; Benth. et Hook. Gen. Plant. i. p. 385.

Climbing shrubs. About thirty species, distributed in Tropical Asia, Africa, and America; none hitherto discovered in Australia.

1. **Gouania blanchetiana,** Miq. in Walp. Ann. ii. p. 272.
PANAMA, Remedios, Veraguas (*Seemann*, 1647).—COLOMBIA. Hb. Kew.

2. **Gouania corylifolia,** Radd. Mem. Pl. Bras. Add. p. 16; DC. Prodr. ii. p. 39.
PANAMA, without locality (*Halsted*), Veraguas (*Seemann*).—Southward to BRAZIL. Hb. Kew.

Probably only a variety of *G. tomentosa*.

3. **Gouania domingensis,** Linn. Sp. Pl. ed. 2, p. 1663.
Gouania glabra, Jacq. Am. t. 179. fig. 40.
FLORIDA.—SOUTH MEXICO, Tantoyuca (*Ervendberg*, 279); PANAMA (*Billberg*).—Tropical SOUTH AMERICA and WEST INDIES. Hb. Kew.

4. **Gouania stipularis,** DC. Prodr. ii. p. 39; Calques des Dess. Fl. Mex. 178.
SOUTH MEXICO (*Sessé*), forests of Yucatan (*Linden*, 893), Oaxaca (*Ghiesbreght*, 328). Hb. Kew.

5. **Gouania tomentosa,** Jacq. Am. p. 263.
SOUTH MEXICO, Hacienda de la Laguna (*Schiede & Deppe*); GUATEMALA, Mazatenango (*Bernoulli*); NICARAGUA, Chontales (*Seemann*, *Tate*); PANAMA (*Seemann*, *S. Hayes*, *Halsted*, *Fendler*, 108), Veraguas (*Seemann*).—WEST INDIES, including CUBA, and Tropical SOUTH AMERICA. Hb. Kew.

6. **Gouania,** sp.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1745),

Order XL. AMPELIDEÆ.

Ampelideæ, Benth. et Hook. Gen. Plant. i. p. 386.

Small trees or climbing shrubs. About 250 species belonging to three genera, only one of which is represented in America.

1. VITIS.

Vitis, Linn. Gen. Plant. n. 284 (et *Cissus,* Linn., et *Ampelopsis,* Michx.); Benth. et Hook. Gen. Plant. i. p. 387.

About 250 species, with few exceptions climbing shrubs, widely dispersed in tropical and temperate regions, but less numerous in Tropical America than in Tropical Africa and India.

1. **Vitis acapulcensis,** H. B. K. Nov. Gen. et Sp. vii. p. 230.
SOUTH MEXICO, near Acapulco, Canjaniquilapa, and Venta de Sierra Colorado, 1200 feet (*Humboldt & Bonpland*).

2. **Vitis acuminata,** Œrst. in Vidensk. Medd. 1856, p. 57.
COSTA RICA, Cordillera, 3500 feet (*Œrsted*).

3. **Vitis æstivalis,** Michx. Fl. Bor.-Am. ii. p. 230?

New Jersey, through the eastern States to Texas and New Mexico,—and perhaps Guatemala, Las Nubes, Cerro de Zunil (*Salvin*). Hb. Kew.

4. **Vitis arachnoidea,** Œrsted, in Vidensk. Medd. 1855, p. 11; affinis *V. caribææ*.

Costa Rica, Cordillera, 3500 feet (*Œrsted*).

5. **Vitis bipinnata,** Torr. et Gr. Fl. N. Am. i. p. 243 (sub *Ampelopside*).

Cuba, Florida, Louisiana, Texas.—North Mexico (Mexican-Boundary Commission). Hb. Kew.

6. **Vitis californica,** Benth. Bot. Voy. Sulph. p. 10.

California.—North Mexico, Sonora (*Smith*, *Thurber*).

7. **Vitis elliptica,** Ch. et Schl. in Linnæa, v. p. 440. = Cissus

South Mexico, Jalapa (*Coulter*, 746; *Schiede* & *Deppe*); Panama (*Duchassaing*).

8. **Vitis erosa,** A. Rich. in Act. Soc. Nat. Par. 106 (sub *Cisso*).

Panama (*S. Hayes*, 65).—Brazil, Guiana. Hb. Kew.

9. **Vitis incisa,** Nutt. in Torr. & Gr. Fl. N. Am. i. p. 243. = Cissus

Texas, New Mexico.—North Mexico, Cocospera valley, Santa Magdalena, Sonora (*Schott*).

10. **Vitis indica,** Linn. Sp. Pl. p. 293; H. B. K. Nov. Gen. et Sp. v. p. 227.

South Mexico, Tasco, 5500 feet (*Humboldt & Bonpland*).

11. **Vitis mexicana,** DC. Prodr. i. p. 629 (sub *Cisso*). = Cissus

Mexico.

12. **Vitis pubescens,** Schl. in Linnæa, x. p. 251 (sub *Ampelopside*). = Cissus

South Mexico, Serrania de Zoncuantla (*Schiede*).

13. **Vitis pubescens,** Miq. Ann. Mus. p. 90. = Cissus

Mexico.

14. **Vitis quinquefolia,** Michx. Fl. Bor.-Am. i. p. 159 (sub *Ampelopside*).

Canada to Texas, Cuba,—and ? North Mexico.

15. **Vitis rotundifolia,** Michx. Fl. Bor.-Am. ii. p. 231?

South Mexico, in woods near Jalapa (*Schiede*).

V. rotundifolia is referred by Torrey and Gray to *V. vulpina*, Linn., a species ranging from Virginia to Florida.

16. **Vitis sicyoides,** Baker, in Mart. Fl. Bras. xiv. pars 2, p. 202.

Cissus sicyoides, Linn.

An exceedingly variable and widely dispersed species in Tropical and Subtropical America and the West Indies.

South Mexico, region of Orizaba (*Botteri*, 1072; *Bourgeau*, 2423), Zacualco (*Bourgeau*, 737), Zimapan (*Coulter*, 748).

Var. **ovata,** Lamk. (species).

South Mexico, San Blas to Tepic (*Coulter*, 744); Guatemala (*Friedrichsthal*); Panama, Chagres (*Fendler*, 52).

Var. **smilacina,** H. B. K. (species).

Panama, island of Taboga (*Seemann*, 1616).

Var. **obtusata,** Benth. (species).

Panama (*Sinclair*).

Var. **tamoides,** Baker, loc. cit. p. 203.

Panama, near the city of Panama (*Seemann*).

Var. **monstrosa,** Baker, loc. cit. p. 203.

Spondylantha aphylla, Presl, Reliq. Hænk. ii. p. 35, t. 53.

South Mexico, Yucatan (*Johnson*); Mexico (*Botteri*); Panama (*Seemann*). Hb. Kew.

17. **Vitis tiliacea,** H. B. K. Nov. Gen. et Sp. v. p. 222.

South Mexico, near the city of Mexico, at 7000 feet (*Humboldt & Bonpland*).

18. **Vitis tiliæfolia,** Willd. in H. B. K. Nov. Gen. et Sp. vii. p. 230.

V. caribæa, DC. Prodr. i. p. 634.

South Mexico, Jalapa (*Galeotti*, 4281; *Linden*, 891), Zimapan (*Coulter*, 747, 1495), cascade at Regla (*Graham*), Cuernavaca (*Bilimek*); Nicaragua, Chontales (*Tate*); Panama, near the town of Cruces (*Seemann*).—This has a wide range in Tropical South America and the West Indies. Hb. Kew.

19. **Vitis trifoliata,** Jacq. Am. p. 23 (sub *Cisso*).

C. obovata, Vahl.

South Mexco, Jalapa (*Galeotti*); Guatemala (*Friedrichsthal*); Nicaragua, Chontales (*Seemann, Tate*); Costa Rica (*Endres*, 221).—West Indies, Colombia, Brazil. Hb. Kew.

20. **Vitis tuberosa,** DC. Prodr. i. p. 629 (sub *Cisso*).

"New Spain."

Probably a variety of *sicyoides.*

21. **Vitis,** sp. (aff. *V. vulpinæ*).

South Mexico, Zimapan (*Coulter*, 749). Hb. Kew.

22. **Vitis,** sp.

Mexico (*Jurgensen*, 217). Hb. Kew.

23. **Vitis,** sp.

South Mexico, region of Orizaba (*Bourgeau*, 2715). Hb. Kew.

Order XLI. SAPINDACEÆ.

Sapindaceæ, Benth. et Hook. Gen. Plant. i. p. 388.

This family consists of about 700 species, referred to eighty genera, and is generally dispersed, except in the colder regions—though by far most numerous in the tropics, especially in America. Shrubs or trees, often of large size, very rarely herbaceous.

Suborder *SAPINDEÆ.*

1. URVILLEA.

Urvillea, H. B. K. Nov. Gen. et Sp. v. p. 105; Benth. et Hook. Gen. Plant. i. p. 392.

Climbing shrubs. About ten species, restricted to Tropical and Subtropical America.

1. **Urvillea berteriana,** DC. Prodr. i. p. 602?

NICARAGUA, Realejo (*Sinclair*). The typical plant occurs in COLOMBIA and the WEST INDIES. Hb. Kew.

2. **Urvillea mexicana,** A. Gray, Pl. Wright. i. p. 38, in adnot.

TEXAS.—NORTH MEXICO, Monterey, Nuevo Leon (*Eaton & Edwards, Thurber*). Victoria, Tamaulipas (*Berlandier*, 2269). SOUTH MEXICO, Cordova (*Botteri*, 1003), Mirador (*Linden*, 905), Tlacolola, Oaxaca (*Andrieux*, 486). Hb. Kew.

3. **Urvillea ulmacea,** H. B. K. Nov. Gen. et Sp. v. p. 105, t. 440.

SOUTH MEXICO, valley of the Cordova (*Bourgeau*, 1744, 1953).—COLOMBIA, VENEZUELA. Hb. Kew.

2. SERJANIA.

Serjania, Plum., Kunth in H. B. K. Nov. Gen. et Sp. v. p. 107; Benth. et Hook. Gen. Plant. i. p. 393.

Climbing shrubs inhabiting Tropical and Subtropical America. Radlkofer (Monogr. *Serjaniæ*, 1875) enumerates 144 species.

1. **Serjania acuta,** Tr. et Pl. Prodr. Fl. N. Gran. i. p. 347.

Serjania salzmanniana, Seem. Bot. Voy. 'Herald,' p. 92, excl. syn. Schl.

PANAMA, Veraguas (*Seemann*, 1644). Hb. Kew.

2. **Serjania brachystachya,** Radlk. Monogr. p. 310.

SOUTH MEXICO, San Augustin (*Liebmann*).

3. **Serjania brachycarpa,** A. Gr. ex Radlk. Monogr. p. 259.

TEXAS.—NORTH MEXICO, in hedges, Ciudad Victoria, Tamaulipas (*Berlandier*, 936, 2366). Hb. Kew.

4. **Serjania cambessediana,** Ch. et Schl. in Linnæa, v. p. 214; Radlk. Monogr. p. 291.

South Mexico, Totutla, Vera Cruz (*Linden*, 901), Misantla (*Liebmann*), Orizaba (*Sumichrast*, 1311), Cordillera of Oaxaca (*Galeotti*, 4299). Hb. Kew.

5. **Serjania caracasana,** Willd. Sp. Pl. ii. p. 465.

Paullinia glabra, Bert.

Guatemala (*Velasquez*); Costa Rica (*Œrsted*).—A widely dispersed and variable species in Tropical S. America.

6. **Serjania cardiospermoides,** Ch. et Schl. in Linnæa, vi. p. 418; Radlk. Monogr. p. 110.

South Mexico, near Papantla (*Schiede & Deppe*), near Zimapan (*Coulter*, 877).

7. **Serjania cornigera,** Turcz. in Bull. Soc. Nat. Mosc. 1859, i. p. 267; Radlk. Monogr. p. 117.

Panama, Barbacoas railway-station (*S. Hayes*), Chagres (*Fendler*), near Paraiso, Mamei, and Gorgone (*Wagner*). Hb. Kew.

8. **Serjania curassavica,** Radlk. Monogr. p. 311.

Paullinia curassavica, Linn. (pro parte).

Paullinia carthaginensis, Jacq. Obs. iii. p. 11, t. 61. fig. 6.

Serjania pubescens, forma *glabrescens,* Seemann, Bot. Voy. 'Herald,' p. 92, excl. syn.

Guatemala (*Friederichsthal*); Panama, Remedios, Veraguas (*Seemann*, 1642).—North part of South America; Cuba. Hb. Kew.

9. **Serjania emarginata,** H. B. K. Nov. Gen. et Sp. v. p. 109.

Serjania acapulcensis, H. B. K.

South Mexico, between Acapulco and La Venta del Exido (*Humboldt & Bonpland*).

10. **Serjania goniocarpa,** Radlk. Monogr. p. 309.

South Mexico, valley of Cordova (*Bourgeau*, 1884), Mirador, near Vera Cruz (*Linden*, 903), Orizaba (*Botteri*, 876). Hb. Kew.

11. **Serjania grandis,** Seem. Bot. Voy. 'Herald,' p. 92.

Panama (*Seemann*).—Colombia.

12. **Serjania grayii,** Schl. in Linnæa, xviii. p. 58; Radlk. Monogr. p. 261.

Mexico (*Baron Gros*); Nicaragua, Segovia (*Œrsted*).

13. **Serjania impressa,** Radlk. Monogr. p. 323.

South Mexico, valley of Cordova (*Bourgeau*, 1463).

14. **Serjania incisa,** Torr. Bot. U.S. et Mex. Bound. Surv. p. 47; Radlk. Monogr. p. 267.

Texas.—North Mexico, mountains of Santa Rosa, Coahuila (*Bigelow*), near Rio San Pedro, at the Painted Caves (*Schott*). Hb. Kew.

15. **Serjania inebrians,** Radlk. Monogr. p. 346.

Costa Rica, Ujaras (*Œrsted*).

16. **Serjania insignis,** Radlk. Monogr. p. 331.

South Mexico (*Hœnke*); Panama, Paraiso railway-station (*Wagner*), Empire and Paraiso railway-stations (*S. Hayes*). Hb. Kew.

17. **Serjania macrococca,** Radlk. Monogr. p. 270.

South Mexico, between Huanapan and Oaxaca (*Andrieux*, 484), Misteca Alta (*Galeotti*, 4302, in part), without habitat (*Jurgensen*, 475).

18. **Serjania mexicana,** Willd. Sp. Pl. ii. p. 465.

Paullinia mexicana, Linn.
Serjania pubescens, H. B. K.
Serjania paniculata, Seem. nec H. B. K.; Radlk. Monogr. p. 235.

South Mexico, valley of Cordova (*Bourgeau*, 2174), Tepic (*Barclay*), San Blas to Guadalaxara (*Coulter*, 881), Yucatan and Tabasco (*Johnson*); Costa Rica, Turrialba (*Œrsted*); Panama, Chagres (*Fendler*), Santiago de Veraguas (*Seemann*).—Colombia and Jamaica. Hb. Kew.

19. **Serjania paniculata,** H. B. K. Nov. Gen. et Sp. v. p. 111, t. 441; Radlk. Monogr. p. 209.

South Mexico, Acapulco (*Barclay*).—Colombia. Hb. Kew

20. **Serjania plicata,** Radlk. Monogr. p. 167.

South Mexico, Yucatan and Tabasco (*Johnson*, 126). Hb. Kew.

21. **Serjania polystachya,** Radlk. Monogr. p. 276.

Paullinia macrostachya, Turcz.

South Mexico, Cordillera of Oaxaca, near Talea, 3000 to 5000 feet (*Galeotti*, 4309).

22. **Serjania racemosa,** Schum. in Skrivt. Nat. Selskab. iii. part 2, p. 127, t. 12. fig. 3; Radlk. Monogr. p. 264.

North Mexico, near Monterey, Nuevo Leon (*Eaton & Edwards*), Zacatecas (*Hartweg*); South Mexico, Vera Cruz to Orizaba (*F. Müller*, 314, 895), Cordova (*Bourgeau*, 1463), Orizaba (*Botteri*, 876), Atlacomulco and Cuernavaca (*Schiede*, *Bilimek*, 240); Costa Rica, Ujares (*Œrsted*). Hb. Kew.

23. **Serjania rhombea,** Radlk. Monogr. p. 324.

Nicaragua (*Tate*, 53); Costa Rica, Tacaca (*Œrsted*); Panama, Empire railway-station (*S. Hayes*, 576), Chagres (*Fendler*, 43; *Seemann*; *Hœnke*).—Venezuela. Hb. Kew.

24. **Serjania samydea,** Griseb. Nov. Fl. Panam. in Bonplandia, 1858, p. 3, excl. syn. Seem.

PANAMA (*Duchassaing*).—COLOMBIA.

25. **Serjania schiedeana,** Schl. in Linnæa, xviii. p. 44.

SOUTH MEXICO, in the warm region (*Schiede*).

26. **Serjania scatens,** Radlk. Monogr. p. 213.

SOUTH MEXICO, Yucatan and Tabasco (*Johnson*); NICARAGUA ("Hb. U.S. Exped." Radlkofer).—Also in CUBA and COLOMBIA.

27. **Serjania seemanni,** Tr. et Pl. in Ann. Sc. Nat. sér. 4, xviii. p. 346; Radlk. Monogr. p. 157.

PANAMA, Nata (*Seemann*).

28. **Serjania setulosa,** Radlk. Monogr. p. 337.

GUATEMALA (*Friedrichsthal*); NICARAGUA, San Juan. Hb. Vindob.

29. **Serjania sordida,** Radlk. Monogr. p. 272.

SOUTH MEXICO, Zacuapan, Cordillera of Vera Cruz (*Galeotti*, 7020), Mirador (*Liebmann*), Oaxaca, 3000 feet (*Galeotti*, 4313), Mexico (*Née*, *Sartorius*).

30. **Serjania sphenocarpa,** Radlk. Monogr. p. 269.

NORTH MEXICO, Sonora Alta (*Coulter*, 885). Hb. Kew.

31. **Serjania subtriplinervis,** Radlk. Monogr. p. 273.

SOUTH MEXICO, Oaxaca (*Jurgensen*, 410). Hb. Kew.

32. **Serjania trachygona,** Radlk. Monogr. p. 327.

SOUTH MEXICO, Campeche (*Houston*); PANAMA, Macume and Gorgona (*Wagner*), San Juan (*Seemann*). Hb. Kew.

33. **Serjania triquetra,** Radlk. Monogr. p. 305.

Serjania racemosa, Hook. et Arn., nec alior.

SOUTH MEXICO, Orizaba (*Botteri*, 427), Tlacolola, Oaxaca (*Andrieux*, 487); GUATEMALA (*Friedrichsthal*); NICARAGUA, near Granada (*Ærsted*), Realejo (*Hinds*). Hb. Kew.

34. **Serjania vesicosa,** Radlk. Monogr. p. 277.

SOUTH MEXICO, near Queretaro (*Schiede*).

35. **Serjania,** sp.

GUATEMALA, Dueñas (*Salvin & Godman*). Hb. Kew.

36. **Serjania,** sp.

NORTH MEXICO, Monterey, Nuevo Leon (*Eaton & Edwards*). Hb. Kew.

37. **Serjania,** sp.

SOUTH MEXICO (*Jurgensen*, 521). Hb. Kew.

38. **Serjania,** sp.

South Mexico, Zimapan (*Coulter*, 677). Hb. Kew.

This is probably *S. cardiospermoides*, Ch. et Schl., for which Radlkofer quotes Coulter's number 877.

3. CARDIOSPERMUM.

Cardiospermum, Linn. Gen. Plant. n. 498; Benth. et Hook. Gen. Plant. i. p. 393.

Climbing shrubs or herbs, about sixteen species, whereof only four are found in the Old World; and two of these also occur in America.

1. **Cardiospermum coluteoides,** H. B. K. Nov. Gen. et Sp. v. p. 100.

South Mexico, near Belen (*Schaffner*), valley of Mexico (*Bourgeau*, 467); Panama, Paraiso railway-station (*S. Hayes*, 530), island of Taboga (*Sinclair*). Hb. Kew.

2. **Cardiospermum grandiflorum,** Sw.? Fl. Ind. Occ. ii. p. 698.

South Mexico (*Coulter*, 887). Hb. Kew.

3. **Cardiospermum halicacabum,** Linn. Sp. Pl. p. 925.

North Mexico (Mex. Bound. Survey); South Mexico, valley of Mexico (*Bourgeau*), Hacienda de la Laguna (*Schiede*); Guatemala, Volcan de Fuego (*Salvin*).

A very common plant in tropical and subtropical regions of both hemispheres.

4. **Cardiospermum hispidum,** H. B. K. Nov. Gen. et Sp. p. 101.

South Mexico, Acapulco (*Lay & Collie*).—Amazon.

5. **Cardiospermum molle,** H. B. K. Nov. Gen. et Sp. v. p. 103.

North Mexico, San Luis (*Virlet d'Aoust*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 123); South Mexico, Puente Nacional, Vera Cruz (*Linden*, 899), Guanajuato, 6500 feet (*Humboldt & Bonpland*), between Chila and Huapan (*Andrieux*, 485), Misteca Alta, Oaxaca (*Galeotti*, 4302), Tehuacan (*Galeotti*, 4301), and Regla (*Galeotti*, 4305); Guatemala, Capertillo, Volcan de Fuego (*Salvin*).—West Indies and Tropical S. America. Hb. Kew.

6. **Cardiospermum pubescens,** Lag. Gen. et Sp. p. 14; DC. Prodr. i. p. 602.

New Spain.

7. **Cardiospermum,** sp.

South Mexico (*Jurgensen*, 926). Hb. Kew.

4. PAULLINIA.

Paullinia, Linn. Gen. Plant. n. 331; Benth. et Hook. Gen. Plant. i. p. 394.

Climbing shrubs, about eighty species, all American, one of which also occurs in Tropical Africa and Madagascar.

1. **Paullinia barbadensis,** Jacq. Obs. iii. p. 12, t. 69. fig. 9?

South Mexico, Colipa (*Schiede & Deppe*).—West Indies.

2. **Paullinia ? clavigera,** Schl. in Linnæa, x. p. 239.
SOUTH MEXICO, Hacienda de la Laguna (*Schiede*).

3. **Paullinia costata,** Ch. et Schl. in Linnæa, x. p. 238.
SOUTH MEXICO, Hacienda de la Laguna (*Schiede & Deppe*), Mirador, near Jalapa (*Galeotti*, 4298; *Linden*, 900), valley of Cordova (*Bourgeau*, 1467). Hb. Kew.

4. **Paullinia cururu,** Linn. Sp. Pl. p. 365.
Paullinia riparia, H. B. K.
PANAMA, in woods, Taboga (*S. Hayes*, 95, 653).—COLOMBIA; VENEZUELA. Hb. Kew.

5. **Paullinia guatemalensis,** Turcz. in Bull. Soc. Nat. Mosc. 1859, i. p. 268.
GUATEMALA (*Vogel*, 12771).

6. **Paullinia pinnata,** Linn. Sp. Pl. p. 366.
Paullinia diversiflora, Miq. Animadvers. in Herb. Surinam. p. 13.
Paullinia hostmanni et *Paullinia nitida,* Steud., nec H. B. K.
SOUTH MEXICO, between La Venta del Exido and Acapulco (*Humboldt & Bonpland*); PANAMA, Chagres (*Fendler*, 455).—Tropical S. AMERICA. Also in Tropical AFRICA and MADAGASCAR. Hb. Kew.

7. **Paullinia polystachya,** Turcz. in Bull. Soc. Nat. Mosc. 1859, i. p. 268.
SOUTH MEXICO, 3000 to 5000 feet (*Galeotti*, 4309).

8. **Paullinia pteropoda,** DC. Prodr. i. p. 605; Calques des Dess. Fl. Mex. 121.
SOUTH MEXICO, near Jalapa and Vera Cruz (*Schiede & Deppe*), valley of Cordova (*Bourgeau*, 1523, 1894). Hb. Kew.

9. **Paullinia velutina,** DC. Prodr. i. p. 605.
Paullinia fusca, Griseb.
Paullinia fuscescens, H. B. K.
Serjania pubescens, Seem., nec H. B. K.
SOUTH MEXICO, San Blas to Tepic (*Coulter*, 883), Orizaba (*Sallé*; *Bourgeau*, 2675), Acapulco (*Beechey*); GUATEMALA (*Friedrichsthal*); NICARAGUA, Realejo (*Sinclair*); PANAMA, island of Taboga (*Duchassaing*; *Sinclair*; *Seemann*, 597; *S. Hayes*, 123).—COLOMBIA; VENEZUELA. Hb. Kew.

10. **Paullinia,** sp.
SOUTH MEXICO (*Linden*, 1024), Tepic (*Barclay*). Hb. Kew.

11. **Paullinia,** sp.
COSTA RICA (*Endres*, 142). Hb. Kew.

12. **Paullinia,** sp.
SOUTH MEXICO (*Hahn*). Hb. Kew.

13. **Paullinia,** sp.
SOUTH MEXICO, Teapa (*Linden*, 1023; *Sumichrast*, 305). Hb. Kew.

14. **Paullinia,** sp.
SOUTH MEXICO, Vera Cruz to Orizaba (*F. Müller*, 1282; *Bourgeau*, 2619, 2675), Mexico (*Jurgensen*, 521). Hb. Kew.

15. **Paullinia,** sp.
NICARAGUA (*Tate*, 57). Hb. Kew.

16. **Paullinia,** sp.
NICARAGUA (*Tate*, 58). Hb. Kew.

17. **Paullinia,** sp.
NICARAGUA (*Tate*, 59). Hb. Kew.

18. **Paullinia,** sp.
GUATEMALA (*Friedrichsthal*, 5). Hb. Kew.

19. **Paullinia,** sp.
PANAMA, railway-route (*S. Hayes*, 499). Hb. Kew.

20. **Paullinia,** sp.
PANAMA (*S. Hayes*, 391). Hb. Kew.

21. **Paullinia,** sp.
PANAMA, Frijoli railway-station (*S. Hayes*, 334). Hb. Kew.

5. SCHMIDELIA.

Schmidelia, Linn. Mant. p. 67; Benth. et Hook. Gen. Plant. i. p. 396.

Shrubs or small trees; about eighty species, half of which are American and the others dispersed in Tropical Africa, Asia, and Australia.

1. **Schmidelia glabrata,** H. B. K. Nov. Gen. et Sp. v. p. 122 ?.
SOUTH MEXICO, Tabasco (*Linden*, 1615).—COLOMBIA. Hb. Kew.

2. **Schmidelia occidentalis,** Sw. Fl. Ind. Occ. ii. p. 665.
Schmidelia semidentata, Miq.
Schmidelia sericea, Camb.
Schmidelia inæquilatera, Mart.
PANAMA, Santiago de Veraguas (*Seemann*, 1212).—CUBA, ST. LUCIA, ST. VINCENT, and in BRAZIL. Hb. Kew.

3. **Schmidelia,** sp. (? *S. cominia,* Sw. Fl. Ind. Occ. ii. p. 667).
SOUTH MEXICO, Yucatan (*Linden*, 894).—WEST INDIES. Hb. Kew.

4. **Schmidelia,** sp.
SOUTH MEXICO, Oaxaca, ravines at 5500 feet (*Galeotti*, 7133). Hb. Kew.

5. **Schmidelia,** sp.
NICARAGUA, Chontales (*Tate*, 433). Hb. Kew.

6. **Schmidelia,** sp.

South Mexico, Oaxaca (*Ghiesbreght*, 342). Hb. Kew.

6. ÆSCULUS.

Æsculus, Linn. Gen. Plant. n. 462; Benth. et Hook. Gen. Plant. i. p. 398.

A genus of about fifteen arboreous and shrubby species, inhabiting North America and the mountains of Mexico, Colombia, and Persia, North India, and the Malayan peninsula in the Old World.

1. **Æsculus mexicana,** Benth. et Hook. Gen. Pl. i. p. 398.

Billia hippocastanum, Peyr. in Bot. Zeit. 1858, p. 153.

South Mexico, Jalapa (*Galeotti*, 7075), Mirador (*Linden*, 24), without habitat (*Jurgensen*, 384), Oaxaca (*Franco*), Mirador and Huatusco (*Heller*). Hb. Kew.

7. UNGNADIA.

Ungnadia, Endl. Atakt. t. 36; Benth. et Hook. Gen. Plant. i. p. 398.

Limited to this one species, which is a shrub or small tree:—

1. **Ungnadia speciosa,** Endl. Atakt. t. 36; Gray, Gen. Ill. ii. tt. 178, 179.

Texas.—North Mexico? (Mex. Bound. Survey, 184). Hb. Kew.

8. CUPANIA.

Cupania, Linn. Gen. Plant. n. 279; Benth. et Hook. Gen. Plant. i. p. 399.

Trees or erect shrubs; about thirty species, generally dispersed in the tropics.

1. **Cupania alba,** Griseb. in Bonplandia, vi. p. 4.

Panama (*Duchassaing*).

This is referred to *C. cinerea*, Pœpp. et Endl. in Hb. Kew.

2. **Cupania americana,** Linn. Sp. Pl. p. 290.

Cupania tomentosa, Sw.

South Mexico, between Sepillo and Estero (*Schiede*); Guatemala (*Friedrichsthal*).—Cuba, Guadaloupe, Trinidad, and northern part of South America. Hb. Kew.

[**Cupania akesia,** Camb.; *Blighia sapida*, Kœnig, Ann. Bot. xiii. 6, p. 2, tt. 16, 17. A native of West Tropical Africa, cultivated in Central America.]

3. **Cupania? dentata,** DC. Prodr. i. p. 614; Calques des Dess. Fl. Mex. 123.

Mexico.

4. **Cupania excelsa,** H. B. K. Nov. Gen. et Sp. v. p. 125.

South Mexico, between Mazatlan and Zumpango, 3900 feet (*Humboldt & Bonpland*).

5. **Cupania fulvida,** Tr. et Pl. Prodr. Fl. N. Gran. p. 374.

Panama, Rio Grande railway-station (*S. Hayes*, 617). Hb. Kew.

6. **Cupania lævigata,** Miq. in Walp. Ann. ii. p. 215.

PANAMA, near the city of Panama and the ruins of Old Panama (*Seemann, Duchassaing*). Hb. Kew.

7. **Cupania seemanni,** Tr. et Pl. Prodr. Fl. N. Gran. i. p. 373.

Cupania sylvatica, Seem. Bot. Voy. 'Herald,' nec Casaretto.

PANAMA, in shady woods near the village of Gorgona (*Seemann*, 642), Empire railway-station (*S. Hayes*, 115). Hb. Kew.

8. **Cupania,** sp.

PANAMA, a common shrub (*S. Hayes*, 113). Hb. Kew.

9. RATONIA.

Ratonia, DC. Prodr. i. p. 618; Benth. et Hook. Gen. Plant. i. p. 399.

About forty-five species, widely dispersed in the tropics, though hitherto none have been discovered on the African continent. They are chiefly large trees.

1. **Ratonia apetala,** Griseb. Fl. Brit. W. Ind. p. 126.

Cupania mexicana, Turcz.

SOUTH MEXICO, Vera Cruz (*Galeotti*, 3492; *Linden*, 734).—JAMAICA, CUBA. Hb. Kew.

2. **Ratonia,** sp.

PANAMA, around the city of Panama (*Seemann*, 289). Hb. Kew.

3. **Ratonia,** sp.

SOUTH MEXICO (*Schiede*, 1295). Hb. Kew.

10. THOUINIA.

Thouinia, Poiteau in Ann. Mus. iii. p. 70, tt. 6, 7; Benth. et Hook. Gen. Plant. i. p. 400.

Trees and erect or climbing shrubs. About twelve species, all endemic in America.

1. **Thouinia decandra,** Humb. et Bonpl. Pl. Æquin. i. p. 198, t. 56.

SOUTH MEXICO, Acapulco (*Bonpland, Beechey*); GUATEMALA (*Friedrichsthal, Skinner*). Hb. Kew.

2. **Thouinia? villosa,** DC. Prodr. i. p. 612; Calques des Dess. Fl. Mex. 122.

SOUTH MEXICO, around Guanaxuaca (*Moçino & Sessé*).

11. MELICOCCA.

Melicocca, Linn. Gen. Plant. n. 47; Benth. et Hook. Gen. Plant. i. p. 401.

Trees. Three species endemic in Tropical America.

1. **Melicocca bijuga,** Linn. Sp. Pl. p. 495.

There are no specimens at Kew from within our boundaries; but in a note accompanying a specimen from Cartagena Mr. S. Hayes says that it grows about PANAMA. It is a native of the northern part of SOUTH AMERICA and TRINIDAD.

12. SAPINDUS.

Sapindus, Linn. Gen. Plant. n. 449; Benth. et Hook. Gen. Plant. i. p. 404.

About forty species of trees and shrubs, generally dispersed in the tropics, and a few reaching subtropical regions.

1. **Sapindus drummondii,** Hook. et Arn. Bot. Beech. Voy. p. 281.
?=*Sapindus divaricatus,* Willd.

South Mexico, without locality (*Beechey*), valley of Cordova (*Bourgeau*). Hb. Kew.

2. **Sapindus inæqualis,** DC. Prodr. i. p. 608.

South Mexico, Misantla (*Schiede & Deppe*); Panama, Rio Grande railway-station (*S. Hayes*, 347).—West Indies and northern parts of South America. Hb. Kew.

3. **Sapindus marginatus,** Willd. Enum. p. 432; Gray, Gen. Ill. ii. t. 180.

Southern States of North America, from Florida westward,—and North Mexico, Sonora (*Torrey*), without locality (*Gregg*). Hb. Kew.

4. **Sapindus,** sp.

South Mexico (*Jurgensen*, 770). Hb. Kew.

5. **Sapindus,** sp.

South Mexico, valley of Cordova (*Bourgeau*, 1466). Hb. Kew.

Suborder *ACEREÆ.*

This suborder is almost confined to the northern hemisphere.

13. NEGUNDO.

Negundo, Mœnch, Meth. p. 334; Benth. et Hook. Gen. Plant. i. p. 409.

Small trees. Four (or two) species, natives of North America and Japan.

1. **Negundo mexicanum,** DC. Prodr. i. p. 596.

South Mexico, in the mountains around Toluca (*Andrieux*, 489), Orizaba (*Botteri*, 1062), Chiapas (*Linden*, 1645). Hb. Kew.

This should perhaps be referred to *N. aceroides*, Mœnch, a species widely dispersed in North America up to the Saskatchewan.

14. ACER.

Acer, Linn. Gen. Plant. n. 1155; Benth. et Hook. Gen. Plant. i. p. 409.

About fifty arboreous species, inhabiting the temperate regions of the northern hemisphere.

1. **Acer mexicanum,** A. Gray, in Proc. Am. Acad. v. p. 176.

North Mexico, in Nuevo Leon (*Berlandier*, 3122).

Suborder *DODONEÆ.*

By far the larger number of species of this suborder are natives of Australia and South Africa.

15. DODONÆA.

Dodonæa, Linn. Gen. Plant. n. 855 ; Benth. et Hook. Gen. Plant. i. p. 410.

This genus comprises nearly fifty species of shrubs and trees, forty of which are Australian. Probably all the American forms belong to one species.

1. **Dodonæa schiedeana,** Schl. in Linnæa, xviii. p. 49.

NORTH MEXICO, in various parts of Sonora (*Thurber*, *Schott*, and others); SOUTH MEXICO, without locality (*Schiede*), Zimapan (*Aschenborn*, 619, 698).

Probably only one of the numerous forms of the next.

2. **Dodonæa viscosa,** Linn. Mant. p. 238.

Dodonæa bialata, H. B. K. Nov. Gen. et Sp. v. t. 442; and many other synonyms.

Found in nearly all tropical and subtropical and south temperate regions throughout the WORLD, and very common in CENTRAL AMERICA and MEXICO.

3. **Dodonæa,** sp.

SOUTH MEXICO, Oaxaca (*Liebmann*). Hb. Kew.

16. ALVARADOA.

Alvaradoa, Liebm. in Vidensk. Meddel. 1853, p. 100 ; Benth. et Hook. Gen. Plant. i. p. 411.

The genus consists of the two shrubby species enumerated here:—

1. **Alvaradoa amorphoides,** Liebm. loc. cit. et Walp. Ann. iv. p. 382.

Picramnia filipetala, Turcz.

SOUTH MEXICO, Oaxaca, near the Pacific Ocean (*Galeotti*, 7135 ; *Liebmann*), Chiapas (*Ghiesbreght*, 617); NICARAGUA, Realejo (*Ærsted*).—BAHAMAS. Hb. Kew.

2. **Alvaradoa mexicana,** Liebm. in Vidensk. Meddel. 1853, p. 100.

SOUTH MEXICO, Bolaños (*Hartweg*, 67); NICARAGUA, Realejo (*Ærsted*). Hb. Kew.

Suborder *STAPHYLEÆ.*

17. TURPINIA.

Turpinia, Vent. Choix, t. et p. 31 ; Benth. et Hook. Gen. Plant. i. p. 413.

Shrubs and trees. About eight species, inhabiting the mountains of India and the Indian Archipelago, of China, the West Indies, and the northern provinces of South America and Central America.

1. **Turpinia insignis,** Tul. in Ann. Sc. sér. 3, vol. vii. p. 296.

Lacepedea insignis, H. B. K. Nov. Gen. et Sp. v. p. 143, t. 444.

South Mexico, near Jalapa (*Humboldt & Bonpland*; *Galeotti*, 4380), region of Orizaba (*Bourgeau*, 2616; *Botteri*, 1010; *Bilimek*, 48), Vera Cruz (*Linden*, 925). Hb. Kew.

2. **Turpinia pinnata,** Hemsl.

Lacepedea pinnata, Schl. in Linnæa, x. p. 240.

South Mexico, between Acatlan and Chiconquiaco (*Schiede*).

Perhaps not specifically different from *T. insignis*.

3. **Turpinia paniculata,** Vent. Choix, t. et p. 31.

Mexico (*Moçino & Sessé*).

Grisebach (Fl. Brit. W. Ind. p. 128) makes this a synonym of *T. occidentalis*, Don, which grows in Jamaica, Cuba, Dominica, &c.

4. **Turpinia? tomentosa,** La Llave et Lex. Nov. Veg. Descr. fasc. i. p. 24.

Mexico.

5. **Turpinia,** sp. (?*T. occidentalis*, Don).

Guatemala, Volcan de Fuego (*Salvin*). Hb. Kew.

Order XLII. SABIACEÆ.

Sabiaceæ, Benth. et Hook. Gen. Plant. i. p. 413.

A small order of trees and shrubs, comprising four genera and about thirty species, dispersed in tropical and subtropical regions, chiefly in the northern hemisphere.

1. MELIOSMA.

Meliosma, Blume, Fl. Jav. Præf. 7; Benth. et Hook. Gen. Plant. i. p. 414; Planch. in Ann. Sc. Nat. série 4, iii. p. 295.

About twenty species, natives of Tropical and Subtropical Asia, Mexico, and Colombia.

1. **Meliosma alba,** Planch. in Ann. Sc. Nat. série 4, iii. p. 295.

Millingtonia alba, Schl. in Linnæa, xvi. p. 395.

Kingsboroughia alba, Liebm. in Vidensk. Meddel. 1850, p. 67.

South Mexico, Jalapa (*Schiede*), San Andres (*Schiede*), province of Mexico (*Sumichrast*). Hb. Kew.

Published under LORENZANEA.

2. **Meliosma**

Lorenzanea dentata, Liebm. in Vidensk. Meddel. 1850, p. 70.

Mexico.

Var. β, Liebm. loc. cit.

Mexico.

3. **Meliosma**

Lorenzanea ira, Liebm. in Vidensk. Meddel. 1850, p. 71.

COSTA RICA.

4. **Meliosma**

Lorenzanea glabrata, Liebm. in Vidensk. Meddel. 1850, p. 71.

MEXICO.

5. **Meliosma**

Lorenzanea vernicosa, Liebm. in Vidensk. Meddel. 1850, p. 72.

COSTA RICA.

[Planchon (Ann. Sc. Nat. série 4, vol. iii. p. 295) thinks *Lorenzanea* must be *Meliosma*; but he had not examined the species; and as we have not had an opportunity of examining them, we leave them without specific names under *Meliosma.*]

Order XLIII. ANACARDIACEÆ.

Anacardiaceæ, Benth. et Hook. Gen. Plant. i. p. 415.

Trees and shrubs, inhabiting tropical and subtropical countries, very few reaching temperate regions.

Tribe ANACARDIEÆ.

1. RHUS.

Rhus, Linn. Gen. Plant. n. 369; Benth. et Hook. Gen. Plant. i. p. 418.

This genus has nearly the same range as the whole family, and numbers upwards of 100 species.

1. **Rhus ciliolata,** Turcz. in Bull. Soc. Nat. Mosc. 1863, i. p. 470.

SOUTH MEXICO (*Linden*, 324).

2. **Rhus copallina,** Linn. Sp. Pl. p. 380.

NEW YORK to FLORIDA, TEXAS,—and ?NORTH MEXICO (Mex. Bound. Survey, 157).—Also in CUBA. Hb. Kew.

3. **Rhus crenatifolia,** Schl. in Linnæa, xvi. p. 483.

SOUTH MEXICO (*Schiede*).

4. **Rhus filicina,** DC. Prodr. ii. p. 67; Calques des Dess. Fl. Mex. 189.

MEXICO, in mountainous regions (*Moçino & Sessé*).

5. **Rhus juglandifolia,** Willd. in Rœm. et Schult. Syst., et in H. B. K. Nov. Gen. et Sp. vi. p. 649.

Rhus lindeniana, Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 468.

SOUTH MEXICO, Mirador (*Linden*, 925), Jalapa (*Galeotti*, 3504). Hb. Kew.

6. **Rhus microphylla,** Engelm. in Gray, Pl. Wright. i. p. 31.

Texas.—North Mexico, Chihuahua and Sonora (*Torrey*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 126). Hb. Kew.

7. **Rhus mollis,** H. B. K. Nov. Gen. et Sp. vii. p. 10, t. 602.

Stiphonia mollis, Nutt.

South Mexico, near Queretaro (*Humboldt & Bonpland*), Misteca Alta, Oaxaca (*Galeotti*, 7187), Cerro de San Felipe (*Liebmann*), Arayan (*De Berghes*), Atotonilco el Grande (*Hartweg*, 280). Hb. Kew.

8. **Rhus pachyrrhachis,** n. sp.

Molliter villosa, ramis crassiusculis, foliis imparipinnatis petiolatis, foliolis 7–13 breviter petiolulatis crassiusculis coriaceis sæpissime oblongo-lanceolatis margine recurvis supra demum glabrescentibus nitidis, rhachi crassa tereti, floribus mediocribus in paniculas parvas dispositis, sepalis 5 membranaceis ellipticis concavis ciliolatis, petalis 5 oblongo-ellipticis, fl. ♀ intus infra medium barbatis, fl. ♂ nudis, stigmatibus late dilatatis recurvis, drupa coccinea villosa, semine fusco nitido.

Arbor vel *frutex,* novellis molliter villosis, ramis crassiusculis. *Folia* imparipinnata, petiolata, 3–6-pollicaria; foliola 7–13, breviter petiolulata vel interdum fere sessilia, crassiuscula, coriacea, sæpissime oblongo-lanceolata, sed interdum ovata, obovata, oblanceolata vel fere orbicularia, 1–2-pollicaria, obtusiuscula nec mucronata, supra demum glabrescentia nitida, costa infra elevata, margine recurvo, rhachi et petiolo teretibus crassis. *Flores* mediocres, subsessiles, basi unibracteati, bibracteolati, in paniculas parvas ($1\frac{1}{2}$–3-pollicares) axillares vel rarissime terminales dispositi; bracteis late ovato-rotundatis, bracteolis ovato-ellipticis bracteisque concavis, subcrustaceis, persistentibus, quam flores brevioribus; sepala 5, elliptica, concava, membranacea, persistentia, extus hirsuta, margine ciliolata; petala 5, oblongo-elliptica, concava, sepalis duplo longiora, fl. ♂ intus nuda, fl. ♀ intus infra medium barbata; stamina 5; discus annularis, carnosus, aurantiacus; ovarium dense hirsutum, stylis brevissimis, stigmatibus late dilatatis recurvis. *Drupa* sphæroidea, circiter 4–5 lin. diametro, coccinea, villosa; semen compresso-ovatum, fuscum, nitidum.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 125); South Mexico, Chiapas (*Ghiesbreght*, 511). Hb. Kew.

9. **Rhus? perniciosa,** H. B. K. Nov. Gen. et Sp. vii. p. 10.

South Mexico, near Santa Teresa and near Tepecuacuilco, 3100 feet (*Humboldt & Bonpland*).

10. **Rhus polyantha,** Benth. Pl. Hartw. p. 60.

South Mexico, Villa Alta, in the mountains of Chinantla (*Hartweg*, 453). Hb. Kew.

11. **Rhus potentillæfolia,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 469.

South Mexico (*Galeotti*, 4006 a).

12. **Rhus rubifolia,** Turcz. in Bull. Soc. Nat. Mosc. 1863, i. p. 612.

South Mexico, Oaxaca (*Galeotti*, 3947; *Liebmann*, 27). Hb. Kew.

13. **Rhus saxatilis,** DC. Prodr. ii. p. 71; Calques des Dess. Fl. Mex. 192.

Mexico.

14. **Rhus schiedeana,** Schl. in Linnæa, xvi. p. 480.

South Mexico, Barranca de Santa Maria, between San José del Oro and Izmiquilpan (*Schiede*), Regla (*Ehrenberg*).

15. **Rhus schmidelioides,** Schl. in Linnæa, xvi. p. 482.

Rhus aromatica, var., Hook. et Arn. Bot. Beech. Voy. p. 284.

South Mexico (*Beechey*), in calcareous mountains near Atotonilco el Grande (*Ehrenberg*), between Zimapan and Encarnacion (*Schiede*). Hb. Kew.

16. **Rhus subcordata,** Turcz. in Bull. Soc. Nat. Mosc. 1858, i. p. 470.

South Mexico (*Galeotti*, 3515).

17. **Rhus terebinthifolia,** Schl. (char. amplif.).

Fruticosa vel arborea, plus minusve villoso-hirsuta, ramis elongatis lenticellatis, foliis imparipinnatis petiolatis sæpe deflexis, foliolis 5–11 breviter petiolulatis vix coriaceis discoloribus ovato-lanceolatis oblongis ellipticisve basi sæpe obliquis apice cuspidulato-mucronatis margine recurvis, rhachi tereti, floribus minimis spicato-paniculatis, paniculis amplis laxis axillaribus terminalibusve, sepalis 5 subscariosis glabris ciliolatis ovato-orbicularibus, petalis 5 late ovato-oblongis ciliolatis, ovario hirsuto, stylis brevissimis, stigmatibus obtusis, drupa immatura villosa.

Frutex (Galeotti), *arbor* (Salvin), plus minusve villoso-hirsuta, ramis rectis, teretibus, elongatis, graciliusculis. *Folia* imparipinnata, petiolata, 3–5-pollicaria, sæpe deflexa; foliola 5–11, sæpissime 9, breviter petiolulata, vix coriacea, discoloria, infra pallidiora, ovato-lanceolata, oblonga vel elliptica, 1–2-pollicaria, basi æqualia vel sæpe obliqua, apice cuspidulato-mucronata, margine recurva, sæpe undulata, supra glabrescentia, subtus pubescentia, costa venisque lateralibus elevatis, rhachi tereti graciliuscula. *Flores* minimi, albi vel pallide rosei, subsessiles, basi unibracteati et bibracteolati, spicato-paniculati, paniculis amplis laxis, quam folia longioribus, terminalibus et præsertim in axillis foliorum superiorum; bracteæ bracteolæque ovatæ, concavæ, diu persistentes, floribus breviores; sepala 5, subscariosa, ovato-orbicularia, glabra, ciliolata; petala 5, late ovato-oblonga, sepalis duplo longiora, ciliolata; stamina 5; ovarium hirsutum, stylis brevissimis, stigmatibus obtusis. *Drupa* immatura villosa, fusiformis.—*Schl. in Linnæa,* v. p. 600.

South Mexico, Papantla (*Schiede*, 715), Mirador (*Liebmann*, 31, 39), Vera Cruz to Orizaba (*Müller*, 1281), Cordillera of Vera Cruz at 3000 feet (*Galeotti*, 3513), Orizaba (*Botteri*, 1000), Mirador (*Linden*, 731); Guatemala, Barranca Honda, Volcan de Fuego, 3800 feet (*Salvin*). Hb. Kew.

Var.? **barclayi.**

Fere omnino glaberrima, ramis petiolis rhachibusque gracilioribus quam in planta typica, foliis semipedalibus, foliolis 5–7 distantibus longiuscule petiolulatis ovato-oblongis, 2–3-pollicaribus. —*R. terebinthifolia,* Benth. Bot. Voy. Sulph. p. 79, vix Schlecht.

South Mexico, Acapulco (*Barclay*). Hb. Kew.

This may prove to be a distinct species.

18. **Rhus toxicodendron,** Linn. Sp. Pl. p. 381.

Widely dispersed in the Eastern United States; Massachusetts southward—to North

Mexico, Sierra de Pajarito, Sonora (*Schott*), cañon of Guadalupe (*Smith*); South Mexico, without locality (*Aschenborn*), Jalapa (*Galeotti*, 3508; *Linden*, 724; *Botteri*, 493). Hb. Kew.

19. **Rhus trilobata,** Nutt. in Torr. & Gray, Fl. N. Am. i. p. 219.

Texas, New Mexico, California.—North Mexico, Sonora (*Torrey*). Hb. Kew.

20. **Rhus virens,** Lindh. in A. Gray, Pl. Lindh. ii. p. 159 (?=*schiedeana*, Schl.).

Texas, New Mexico.—North Mexico, along mountain-streams on the Sonoita (*Wright*). Hb. Kew.

21. **Rhus,** sp. (? *R. schiedeana*, Schl.).

South Mexico, Tehuacan (*Galeotti*, 3500), Zimapan (*Coulter*, 870). Hb. Kew.

22. **Rhus,** sp.

South Mexico, Orizaba (*Botteri*, 1026). Hb. Kew.

23. **Rhus,** sp.

South Mexico, Zimapan (*Coulter*, 878; *Tate*). Hb. Kew.

24. **Rhus,** sp.

South Mexico, Orizaba (*Botteri*, 1004). Hb. Kew.

25. **Rhus,** sp.

South Mexico, Zimapan (*Coulter*, 875). Hb. Kew.

26. **Rhus,** sp.

South Mexico, exact locality uncertain (*Andrieux*, 465). Hb. Kew.

2. COMOCLADIA.

Comocladia, P. Browne, Hist. Jam. p. 124; Benth. et Hook. Gen. Plant. i. p. 419.

Four arboreous species, inhabiting the West Indies and Tropical America.

1. **Comocladia acuminata,** DC. Prodr. ii. p. 65; Calques des Dess. Fl. Mex. 193.

Mexico (*Moçino & Sessé*).

2. **Comocladia mollissima,** H. B. K. Nov. Gen. et Sp. vii. p. 17, t. 607.

South Mexico, between Acapulco and Venta del Exido, 1200 feet (*Humboldt & Bonpland*).

[*Mangifera indica*, Linn., an Asiatic fruit-tree, is cultivated and partially naturalized in Central America.]

3. ANACARDIUM.

Anacardium, Rottb. in Act. Hafn. ii. p. 252, ex DC. Prodr. ii. p. 62; Benth. et Hook. Gen. Plant. i. p. 420.

Shrubs and trees. About half a dozen species, endemic in Tropical America.

1. **Anacardium occidentale,** Linn. Sp. Pl. p. 548.

Anacardium occidentale, β. americanum, Jacq. Am. i. t. 181. fig. 35.

Mexico (*Grisebach*); Panama, Chagres (*Fendler*, 308).—Tropical South America, from Brazil northward, and the West Indies. Hb. Kew.

Cultivated and naturalized in other tropical countries.

2. **Anacardium rhinocarpus,** DC. Prodr. ii. p. 62.

Rhinocarpus excelsa, Bertero et Balbis, H. B. K. Nov. Gen. et Sp. vii. p. 6. t. 601.

San Salvador, Libertad (*Barclay*); Panama, without locality (*Seemann*).—Colombia. Hb. Kew.

4. SCHINUS.

Schinus, Linn. Gen. Plant. n. 1130; Benth. et Hook. Gen. Plant. i. p. 422.

About twelve arboreous species, endemic in America.

1. **Schinus molle,** Linn. Sp. Pl. p. 1467; Lam. Ill. t. 822.

South Mexico, common (*Andrieux*, 467; *Hartweg*, *Parkinson*, *Gregg*, *Schaffner*, *Christy*).—Widely dispersed in Tropical America to South Brazil. Hb. Kew.

Cultivated and naturalized in other warm countries.

"The Peru or Pepper tree, abundant throughout the valley of Mexico, supposed to have been introduced by the early Spaniards in order to procure wood in the volcanic district. It has been spread by the birds, who eat the seeds freely."—*H. Christy.*

5. PISTACIA.

Pistacia, Linn. Gen. Plant. n. 1108; Benth. et Hook. Gen. Plant. i. p. 419.

Trees or shrubs. About six species—five inhabiting the Mediterranean region from Western Asia to the Canary Islands, and one Mexico.

1. **Pistacia mexicana,** H. B. K. Nov. Gen. et Sp. vii. p. 22, t. 608.

Texas.—Mexico, Zimapan (*Coulter*, 869), Cuesta de S. Juan del Estado (*Liebmann*), Sauco (*Ruhland*), Barranca de Tioselo (*Schiede*), Chilpancingo (*Humboldt & Bonpland*), Vera Cruz to Orizaba (*Müller*, 1408), San Luis Potosi to San Antonio (*Parry*, 98). Hb. Kew.

6. SMODINGIUM.

Smodingium, E. Meyer, ex Benth. et Hook. Gen. Plant. i. p. 422.

Shrubs or trees. Besides the two following, there is one South-African species.

1. **Smodingium andrieuxii,** Baill. Adans. xi. p. 182.

South Mexico, Province of Mexico (*Andrieux*, 184). Hb. Paris.

2. **Smodingium virletii,** Baill. Adans. xi. p. 182.

South Mexico, San Luis Potosi (*Virlet d'Aoust*, 1044). Hb. Paris.

7. TAPIRIA.

Tapiria, Juss. Gen. Plant. p. 372; Benth. et Hook. Gen. Plant. i. p. 423.

Shrubs or trees. About ten species, Asiatic and American, chiefly the latter.

1. **Tapiria cyrtocarpa,** Benth. et Hook. loc. cit.

Cyrtocarpa procera, H. B. K. Nov. Gen. et Sp. vii. p. 20, t. 609.

South Mexico, near Mescala, Cañada de Sopilote, Estola, and Zumpango, 2400 to 3600 feet (*Humboldt & Bonpland*).

[*Cyrtocarpa? copalillo*, Schl. in Linnæa, xvi. p. 485, collected in Papantla and Hacienda de la Laguna by Schiede, is a doubtful plant.]

8. MAURIA.

Mauria, Kunth in Ann. Sc. Nat. ii. p. 338; Benth. et Hook. Gen. Plant. i. p. 426.

About ten arboreous species, endemic in America.

1. **Mauria puberula,** Tul. in Ann. Sc. Nat. sér. 3, vol. vi. p. 366.

Mauria seemannii, Pl. et Œrst.

Moschoxylon veraguense, Seem.

Panama, Boquete, Veraguas (*Seemann*, 1253).—Colombia, Venezuela, Peru. Hb. Kew.

Tribe SPONDIEÆ.

9. DASYCARYA.

Dasycarya, Liebm. in Vidensk. Meddel. 1853, p. 98; Benth. et Hook. Gen. Plant. i. p. 427.

Limited to this one arboreous species:—

1. **Dasycarya grisea,** Liebm. in Vidensk. Meddel. 1853, p. 98.

South Mexico, Tsatitlan del Camino, Oaxaca (*Liebmann*). Hb. Kew.

10. SPONDIAS.

Spondias, Linn. Gen. Plant. n. 377; Benth. et Hook. Gen. Plant. i. p. 426.

Trees. About eight species, widely dispersed in the tropics, sometimes cultivated.

1. **Spondias lutea,** Linn. Sp. Pl. p. 613.

South Mexico, Yucatan and Tabasco (*Johnson*), near Tantoyuca (*Ervendberg*, 353); Costa Rica, Punta Arenas (*S. Hayes*, 616); Panama, Chagres (*Fendler*, 141).—Colombia and West Indies, including Cuba and Jamaica. Hb. Kew.

2. **Spondias,** sp. (? *S. purpurea*, Linn. Sp. Pl. p. 613).

Panama, on the sea-shore near the city of Panama (*Seemann*). Hb. Kew.

True *S. purpurea* occurs in Jamaica, Cuba, and Colombia.

3. **Spondias,** ? sp.
SOUTH MEXICO, region of Omaelca (*Bourgeau*). Hb. Kew.

4. **Spondias,** sp.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1816). Hb. Kew.

5. **Spondias,** ? sp.
SOUTH MEXICO, valley of Mexico (*Bourgeau*, 189). Hb. Kew.

11. JULIANIA.

Juliania, Schl. in Linnæa, xvii. p. 746; Benth. et Hook. Gen. Plant. i. p. 428.

Trees. One Peruvian species and the following.

1. **Juliania adstringens,** Schl. in Linnæa, xvii. p. 746.
Hypopterygium adstringens, Schl. loc. cit. p. 635.
SOUTH MEXICO, at San Francisco Jetecala, near Mecatlan, at Tlaquiltenango (*Schiede*).

Order XLIV. CORIARIEÆ.

Coriarieæ, Benth. et Hook. Gen. Plant. i. p. 429.

This family consists of one genus and three to five shrubby species, dispersed in the Mediterranean region, Himalaya, Japan, New Zealand, and South America.

1. CORIARIA.

Coriaria, Linn. Gen. Plant. n. 458; Benth. et Hook. Gen. Plant. i. p. 429.

Distribution of the order.

1. **Coriaria thymifolia,** H. B. K. Nov. Gen. et Sp. vii. p. 168, t. 636.
Coriaria atropurpurea, DC.
NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, Chiapas (*Linden*, 1659), Oaxaca (*Ghiesbreght*, 335), Cordillera of Michoacan (*Galeotti*, 7213); GUATEMALA, Zunil (*Hartweg*, 524; *Salvin & Godman*).—Widely dispersed in SOUTH AMERICA; also common in NEW ZEALAND. Hb. Kew.

Series III. CALYCIFLORÆ.

Order XLV. CONNARACEÆ.

Connaraceæ, Benth. et Hook. Gen. Plant. i. p. 430.

Shrubs and trees, about 140 species, referred to twelve genera, chiefly natives of tropical regions. Absent from Australia.

Tribe CONNAREÆ.

1. ROUREA.

Rourea, Aubl. Pl. Guian. i. p. 467, t. 187; Benth. et Hook. Gen. Plant. i. p. 432.

Shrubs and small trees. Upwards of forty species, chiefly natives of Tropical America and Asia. Only four have been detected in Tropical Africa.

1. **Rourea frutescens,** Aubl. Guian. t. 187.

PANAMA, isle of Taboga (*Duchassaing*).—GUIANA and TRINIDAD.

2. **Rourea glabra,** H. B. K. Nov. Gen. et Sp. vii. p. 41.

SOUTH MEXICO, Acapulco (*Beechey*), near Tantoyuca (*Ervendberg*, 171); PANAMA, Chagres (*Fendler*, 57, 127), borders of marshes near the city of Panama (*S. Hayes*, 643). —JAMAICA, ST. LUCIA, and northern part of SOUTH AMERICA. Hb. Kew.

3. **Rourea? oblongifolia,** Hook. et Arn. Bot. Beech. Voy. p. 283.

SOUTH MEXICO, Tepic (*Lay*).

2. CONNARUS.

Connarus, Linn. Gen. Plant. n. 830; Benth. et Hook. Gen. Plant. i. p. 432.

Upwards of fifty species of small trees and shrubs, having nearly the same geographical range as the family.

1. **Connarus,** sp. (? *C. hæmorrhœus,* Karst. Fl. Colomb. ii. p. 73, t. 137).

PANAMA, borders of swamps near the city of Panama (*S. Hayes*, 651). Hb. Kew.

2. **Connarus panamensis,** Griseb. in Bonplandia, 1858, p. 6.

PANAMA (*Duchassaing*).

2. **Connarus turczaninowii,** Hemsl.

Connarus panamensis, Turcz. in Bull. Soc. Nat. Mosc. 1859, xxxii. p. 277, non Griseb.

PANAMA, Frijoli railway-station (*S. Hayes*, 332), Chagres (*Fendler*, 128). Hb. Kew.

Tribe CNESTIDEÆ.

3. CNESTIDIUM.

Cnestidium, Planch. in Linnæa, xxiii. p. 438; Benth. et Hook. Gen. Plant. i. p. 433.

Shrubs or trees, endemic in Panama and Mexico.

1. **Cnestidium rufescens,** Pl. in Linnæa, xxiii. p. 439.

SOUTH MEXICO, neighbourhood of Tabasco (*Linden*, 823); NICARAGUA, Volcan de Mombacho (*Œrsted*); PANAMA, Chagres (*Fendler*, 56), in woods, Loxeria (*S. Hayes*, 725), isle of Taboga (*Barclay*). Hb. Kew.

2. **Cnestidium,** sp.

SOUTH MEXICO, Orizaba (*Sallé*). Hb. Kew.

Order XLVI. LEGUMINOSÆ.

Leguminosæ, Benth. et Hook. Gen. Plant. i. p. 434.

About 420 genera and 6500 species, generally dispersed, except in New Zealand and the very coldest regions, where they are very rare.

Suborder I. *PAPILIONACEÆ.*

Tribe GENISTEÆ.

There are forty-two genera of this tribe, consisting mainly of shrubs and herbaceous plants, inhabiting nearly all temperate and subtropical regions.

1. CROTALARIA.

Crotalaria, Linn. Gen. Plant. n. 862; Benth. et Hook. Gen. Plant. i. p. 479.

A very large genus of herbaceous and shrubby plants, represented in nearly all tropical and subtropical regions. Upwards of 100 occur in Tropical Africa alone, and nearly eighty in British India. They are also very numerous in America; and some of the species are amphigæous. The whole genus comprises at least 200 species.

1. **Crotalaria anagyroides,** H. B. K. Nov. Gen. et Sp. vi. p. 404.

SOUTH MEXICO, near Tantoyuca (*Ervendberg*, 22).—VENEZUELA.

2. **Crotalaria angulata,** Miller, Dict. no. 9.

SOUTH MEXICO, Campeche.

3. **Crotalaria bupleurifolia,** Schl. in Linnæa, v. p. 575, xii. p. 279; Hook. Ic. Pl. t. 372.

C. parviflora, Roth, var. *glabella,* Mart. et Gal., et var. *hirsutissima,* Mart. et Gal. in Bull. Acad. Brux. x. p. 32.

NORTH MEXICO, Cerro de Pinal (*Seemann*, 1534); SOUTH MEXICO, Cuesta Grande de Chiconquiaco (*Schiede & Deppe*), Jalapa (*Galeotti*), Hacienda de la Laguna (*Schiede & Deppe*), woods of Zacuapan (*Galeotti*, 3277), forests of Juquila, Oaxaca (*Galeotti*, 3177). Hb. Kew.

4. **Crotalaria cajanifolia,** H. B. K. Nov. Gen. et Sp. vi. p. 405.

SOUTH MEXICO, on the slopes of Volcan de Jorullo, 3480 feet (*Humboldt & Bonpland*); GUATEMALA, lower part of the Volcan de Fuego (*Salvin & Godman*, 205); COSTA RICA (*Endres*, 238); PANAMA, near the city of Panama (*Seemann*, 228), Empire railway-station (*S. Hayes*, 284). Hb. Kew.

5. **Crotalaria carmioli,** Polakowsky in Linnæa, xli. p. 558.
COSTA RICA, in meadows and on roadsides (*Polakowsky*).

6. **Crotalaria dichotoma,** Grah. in Edinb. New Phil. Journ. ii. p. 186.
SOUTH MEXICO, Oaxaca (*Andrieux*, 422), Tacubaya (*Schaffner*, 14), Michoacan (*Galeotti*, 3380). Hb. Kew.
Perhaps a variety of *C. pumila*.

7. **Crotalaria dombeyana,** DC. Prodr. ii. p. 132?
SOUTH MEXICO, on the Pacific coast of Oaxaca (*Galeotti*, 3191).—Type from PERU.

8. **Crotalaria elliptica,** Mart. et Gal. in Bull. Acad. Brux. x. 2, p. 34.
SOUTH MEXICO, at an altitude of 4000 feet (*Galeotti*, 3380).

Var. **multiflora,** Mart. et Gal. loc. cit.
SOUTH MEXICO, near Totutla (*Galeotti*, 3295).

9. **Crotalaria eriocaula,** Schauer in Linnæa, xx. p. 738.
SOUTH MEXICO, near the town of Tula (*Aschenborn*).

10. **Crotalaria eriocarpa,** Benth. Bot. Voy. Sulph. p. 80.
SOUTH MEXICO, Mazatlan (*Seemann*, 1526), without special habitats (*Beechey*, *Tate*, *Coulter*, *&c.*). Hb. Kew.

11. **Crotalaria guatemalensis,** Benth. in Vidensk. Meddel. 1853, p. 2.
GUATEMALA, Rio Guacalate (*Salvin*), Costa Grande, Ixtacapa (*Bernoulli*, 555); COSTA RICA, province of Guanacaste (*Ærsted*), roadsides, sandy places, San José (*Polakowsky*); PANAMA, in cleared places, Cerro de Ancon (*Seemann*). Hb. Kew.

12. **Crotalaria incana,** Linn. Sp. Pl. p. 1005; Jacq. Obs. iv. t. 82.
NORTH MEXICO, San Luis Potosi to Tampico (*Palmer*, 1046); SOUTH MEXICO, Acapulco (*Barclay*), between Tehuantepec and the Pacific Ocean (*Andrieux*, 424, 425), region of Orizaba (*Bourgeau*, 2571, 3176; *Botteri*, 715), ravines of Real del Monte (*Galeotti*, 3361), Barranca de Mextitlan (*Galeotti*), valley of Cordova (*Bourgeau*, 1724); GUATEMALA (*Friedrichsthal*).—A common plant in the WEST INDIES and Tropical SOUTH AMERICA; also in Tropical AFRICA and INDIA, though possibly introduced in the latter country. Hb. Kew.

13. **Crotalaria leptoclona,** Schauer in Linnæa, xx. p. 737.
SOUTH MEXICO (*Aschenborn*).

14. **Crotalaria longirostrata,** Hook. et Arn. Bot. Beech. Voy. pp. 285, 414.
SOUTH MEXICO, Acapulco (*Sinclair*), Jalisco (*Beechey*); GUATEMALA, Volcan de Fuego, 5300 feet (*Salvin*), Mazatenango (*Bernoulli*, 545).

Var. β. **macrophylla.**
NICARAGUA, Gulf of Fonseca (*Sinclair*).

15. **Crotalaria maypurensis,** H. B. K. Nov. Gen. et Sp. vi. p. 403.

Crotalaria acapulcensis, Hook. et Arn.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 128); South Mexico, Acapulco (*Hinds*, *Beechey*), banks of rivers near the Pacific Ocean in Oaxaca (*Galeotti*, 3179), Hacienda de la Laguna (*Schiede*), Mirador (*Linden*, 700), lower part of San Felipe (*Andrieux*, 423), valley of Cordova (*Bourgeau*, 1725); Guatemala (*Skinner*); Panama, near the city of Panama (*Seemann*).—Southward to Peru and Brazil. Hb. Kew.

16. **Crotalaria mollicula,** H. B. K. Nov. Gen. et Sp. vi. p. 403.

South Mexico, near Guanaxuato, 6420 feet (*Humboldt & Bonpland*), oak-woods and on the borders of streams near Yavesia on the eastern sierra of Oaxaca, at 7000 feet (*Galeotti*, 3229). Hb. Kew.

17. **Crotalaria nitens,** H. B. K. Nov. Gen. et Sp. vi. p. 399.

South Mexico, Jalapa (*Galeotti*, 3225).—Southward to Peru and Brazil. Hb. Kew.

18. **Crotalaria ovalis,** Pursh in DC. Prodr. ii. p. 124; Bot. Mag. t. 3006.

Crotalaria hookeriana, A. DC.

Crotalaria procumbens, DC. Prodr. ii. p. 129; Calques des Dess. Fl. Mex. 227.

Carolina, Florida, Louisiana.—Mexico, San Blas (*Beechey*), Zimapan and Real del Monte (*Coulter*), Tepic (*Barclay*), valley of Cordova (*Bourgeau*, 1723), valley of Mexico (*Bourgeau*, 574); Guatemala, Volcan de Fuego, ridge above Calderas, 8300 feet (*Salvin*); Costa Rica (*Endres*, 224), wet meadows, Angostura (*Polakowsky*).—Also in Colombia. Hb. Kew.

19. **Crotalaria parviflora,** Roth, Cat. ex Ch. et Schl. in Linnæa, v. p. 574.

Crotalaria platycarpa, Link.

South Mexico, Cerro Colorado, on hills near Jalapa (*Schiede & Deppe*).

Schlechtendal, in Linnæa, xii. p. 279, makes this a variety of *C. sagittalis*.

20. **Crotalaria pilosa,** Mill. Dict. no. 2.

South Mexico, Vera Cruz (*ex Miller*).

21. **Crotalaria pterocaulon,** Desv. Journ. Bot. 1814, ii. p. 76.

Crotalaria genistella, H. B. K.

Panama, Tolé, Veraguas (*Seemann*, 1187).—Widely spread in Tropical South America and in Jamaica and Trinidad. Hb. Kew.

22. **Crotalaria pumila,** Ortega, Dec. ii. p. 23.

Crotalaria lupulina, H. B. K. Nov. Gen. et Sp. vi. p. 402, t. 590.

Crotalaria triantha, DC. Prodr. ii. p. 135; Calques des Dess. Fl. Mex. 225.

New Mexico.—North Mexico, Sonora (*Schott*), Sonora and Chihuahua (*Thurber*), valleys in the Chiricahui Mountains (*Wright*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 127), Zacatecas (*Hartweg*, *Coulter*); South Mexico, Vera

Cruz (*Galeotti*, 3295), Volcan de Jorullo (*Humboldt & Bonpland*), region of Orizaba (*Bourgeau*, 3179), valley of Mexico (*Bourgeau*, 575; *Schaffner*, 114). Hb. Kew.

This species should perhaps include *C. galeottii*, *C. dichotoma*, *C. tepicana*, &c.

23. **Crotalaria purshii,** DC. Prodr. ii. p. 124.

Carolina, Virginia, &c., to—North Mexico, Sierra Madre (*Seemann*, 2187). Hb. Kew.

24. **Crotalaria sagittalis,** Linn. Sp. Pl. p. 1003.

This species extends through the eastern States of North America, from New Jersey southward to—North Mexico, Sonora (*Thurber*); South Mexico, Orizaba (*Botteri*, 679, 683, 684), savannas at 3000 feet, Oaxaca (*Galeotti*, 3256); Nicaragua, Greytown (*Tate*, 96).—It also occurs in Venezuela and Peru. Hb. Kew.

Schlechtendal, in Linnæa, xii. p. 279, makes the following varieties:—

α. **sagittalis.**

β. **parviflora,** Roth (species).

γ. **rotundifolia,** Poir. (species).

25. **Crotalaria schiedeana,** Steud. Nomencl. Bot. i. p. 445.

Crotalaria bracteata, Ch. nec alior., in Linnæa, v. p. 575.

South Mexico, woods and savannas, Zacuapan, 2000 to 3000 feet (*Galeotti*, 3325). Hb. Kew.

26. **Crotalaria setifera,** DC. Prodr. ii. p. 131; Calques des Dess. Fl. Mex. 226.

South Mexico, Yavesia, Oaxaca, at 7000 feet (*Galeotti*, 3229), without localities (*Sallé*, *Parkinson*). Hb. Kew.

27. **Crotalaria stipularia,** Desf. Journ. Bot. 1814, ii. p. 76.

South Mexico, region of Orizaba (*Bourgeau*, 3202), valley of Cordova (*Bourgeau*, 1723).—Southward to Peru and Brazil, and in the West Indies.

28. **Crotalaria tepicana,** Hook. et Arn. Bot. Beech. Voy. p. 414.

South Mexico, Tepic (*Barclay*), Mexico (*Aschenborn*).

28. **Crotalaria undulata,** Knowles and Westcott, Fl. Cab. ii. p. 158.

Mexico.

30. **Crotalaria,** sp.

Guatemala, in sandy places (*Bernoulli*, 282). Hb. Kew.

31. **Crotalaria,** sp.

North Mexico, Cerro de Pinal (*Seemann*), Hb. Kew.

32. **Crotalaria,** sp.

South Mexico (*Galeotti*, 3173). Hb. Kew.

2. LUPINUS.

Lupinus, Linn. Gen. Plant. n. 865; Benth. et Hook. Gen. Plant. i. p. 480.

Herbs or undershrubs, rarely erect shrubs. About eighty species have been described; and, with the exception of a few annual species natives of the Mediterranean region, they are all endemic in America, chiefly on the western side of North America.

1. **Lupinus aschenbornii,** Schauer in Linnæa, xx. p. 739.
SOUTH MEXICO (*Aschenborn*), Toluca, Cocustepec, 8800 feet (*Heller*); COSTA RICA, Volcan de Irazu, 9000 to 11000 feet (*Wendland*).

2. **Lupinus barkeri,** Lindl. Bot. Reg. xxv. t. 56.
MEXICO.

3. **Lupinus barkeriæ,** Knowles et Westcott, Fl. Cab. iii. t. 122.
MEXICO.

4. **Lupinus bimaculatus,** Hook. in Sweet's Fl. Gard. ser. 2, t. 314.
SOUTH MEXICO, Toluca, in alpine meadows, 12,000 feet (*De Berghes, Heller*).

5. **Lupinus campestris,** Schl. et Ch. in Linnæa, v. p. 589.
SOUTH MEXICO, Llanos between Perote and Tlachichuca (*Schiede & Deppe*), humid forests of the eastern Cordillera of Oaxaca, near the Hacienda del Carmen and Yavesia, 7000 to 8000 feet (*Galeotti*, 3412); PANAMA, grassy slopes of Chiriqui, Veraguas (*Seemann*). Hb. Kew.

6. **Lupinus canus,** n. sp.

Perennis? erectus, cano-sericeo-villosis, foliis caulinis graciliter petiolatis sæpissime 8-foliolatis, foliolis linearibus, stipulis lineari-subulatis petiolo basi adnatis, floribus parvis verticillatis, bracteis valde deciduis, calycis sericei labiis fere æqualibus, vexillo orbiculari, alis oblique oblongis brevissime unguiculatis, ovario hirsuto circiter 8-ovulato, legumine dense hirsuto.

Herba perennis?, erectus, ramosus, 2–3-pedalis, ramis graciliusculis obscure striatis, plus minusve cano-pubescentibus. *Folia* caulina, graciliter petiolata, cano-sericeo-villosa, sæpissime 8-foliolata, superiora interdum 5-foliolata; foliola sessilia, linearia, 6–15 lin. longa, utrinque acuta, maxima 2–3 lin. lata, petiolo 1–2-pollicari; stipulæ lineari-subulatæ, 6–9 lin. longæ, petiolo basi adnatæ. *Flores* mediocres, verticillatim racemosi, breviter pedicellati, bracteati, bracteis subulatis quam alabastra paullo longioribus cito deciduis; calycis sericei labia fere æqualia, circiter 3 lin. longa, superius brevissime bidentatum, inferius integrum; vexillum orbiculare, sessile, 5 lin. diametro; alæ oblique oblongæ, circiter 6 lin. longæ, fere liberæ, brevissime unguiculatæ; carina nuda, cymbiformis, vix aut rostrata aut incurvata; stamina 10, eorum 5 antheris multo minoribus; ovarium hirsutum, circiter 8-ovulatum. *Legumen* sericeo-villosum, unicum mancum tantum visum.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 129). Hb. Kew.

7. **Lupinus clarkei,** Œrst. in Vidensk. Meddel. 1853, p. 1.
COSTA RICA, Volcan de Irazu, 8000 to 9000 feet (*Œrsted*). Hb. Kew.

8. **Lupinus ehrenbergii,** Schl. in Linnæa, xii. p. 334; Bot. Reg. xxxiii. t. 11.
North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 132); South Mexico, Mineral del Monte (*Ehrenberg*), pine-forests Anganguio (*Hartweg*), Oaxaca (*Ghiesbreght*). Hb. Kew.

9. **Lupinus elegans,** H. B. K. Nov. Gen. et Sp. vi. p. 477; Bot. Reg. t. 1581.
South Mexico, between Real de Moran and Totonilco el Grande (*Humboldt & Bonpland*), Mineral del Monte to Huajalote (*Ehrenberg*), pine- and oak-forests, Real del Monte, at 8000 feet, and peak of Orizaba, 9000 to 10,000 feet (*Galeotti*, 3341, 3390), valley of Mexico (*Bourgeau*, 946; *Hahn*), without habitats (*Tate*, *Keerl*, *Parkinson*, *Müller*, *Bates*, &c.) Hb. Kew.

10. **Lupinus exaltatus,** Zucc. in Flora, 1832, ii. Beibl. p. 70.
Mexico.—Introduced into European gardens by Karwinski.

11. **Lupinus flabellaris,** Bert. Fl. Guat. p. 30.
Guatemala, Volcan de Agua (*Velasquez*).

12. **Lupinus glabellus,** Mart. et Gal. in Bull. Acad. Brux. x. **2**, p. 37.
South Mexico, forests of the peak of Orizaba, 9000 to 10,000 feet (*Galeotti*, 3411).

13. **Lupinus hartwegii,** Lindl. Bot. Reg. 1839, t. 31.
Lupinus bilineatus, Benth.
North Mexico, Zacatecas (*Hartweg*); South Mexico, valley of Mexico (*Bourgeau*, 88, 1056). Hb. Kew.

14. **Lupinus leptocarpus,** Benth. Pl. Hartw. p. 11.
North Mexico, Zacatecas (*Hartweg*). Hb. Kew.

15. **Lupinus leptophyllus,** Schl. et Ch. in Linnæa, v. p. 589.
South Mexico, between Tlachichuca and Tepetitlan (*Schiede & Deppe*).

16. **Lupinus maderensis,** Seem. Bot. Voy. 'Herald,' p. 278, t. 53.
North Mexico, Sierra Madre, in woods (*Seemann*, 2185). Hb. Kew.

17. **Lupinus marshallianus,** Sweet, Brit. Fl. Gard. ser. 2, t. 139.
South Mexico, Zimapan (*Coulter*, 568). Hb. Kew.

18. **Lupinus mexicanus,** Cerv. in DC. Prodr. ii. p. 408; Bot. Reg. t. 457.
South Mexico, volcanic rocks of Popocatepetl, at 10,000 to 11,000 feet, almost the upper limit of vegetation (*Galeotti*, 3369), Tacubaya (*Aschenborn*).

19. **Lupinus montanus,** H. B. K. Nov. Gen. et Sp. vi. p. 478.
South Mexico, Nevada de Toluca, 9000 to 10,200 feet (*Humboldt & Bonpland*), forests of Cerro de San Felipe, Oaxaca, 8000 to 9500 feet (*Galeotti*, 3198).

20. **Lupinus mutabilis,** Sweet, Fl. Gard. ser. 1, t. 130.
Mexico (*De Berghes*).

21. **Lupinus pilosissimus,** Mart. et Gal. in Bull. Acad. Brux. x. 2, p. 37.

South Mexico, Cerro de San Felipe, Oaxaca, 8000 to 9500 feet (*Galeotti*, 3199).

22. **Lupinus pulchellus,** Sweet, Brit. Fl. Gard. ser. 2, t. 67.

Mexico (*Mackenzie*). Hb. Kew.

23. **Lupinus pusillus,** Pursh, Fl. Am. Sept. ii. p. 468.

North America, Rocky Mountains southward to—North Mexico, Sonora, in various parts (*Parry & Smith*).

24. **Lupinus ramosissimus,** Benth. in Lindl. Bot. Reg. xxxi. t. 25.

Mexico.

25. **Lupinus stipulatus,** Agardh fil. Syn. Gen. Lup. p. 38.

South Mexico, Tlalpuxahua (*Graham*, 169; *Aschenborn*, 541). Hb. Kew.

26. **Lupinus sylvaticus,** Hb. Kew.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 131); South Mexico, around Toluca (*Andrieux*, 446), Desierto Viejo (*Bourgeau*, 732, 773), without locality (*Tate*). Hb. Kew.

27. **Lupinus uncinatus,** Schl. in Linnæa, xii. p. 333.

South Mexico, Mineral del Monte (*Ehrenberg*).

28. **Lupinus vaginatus,** Ch. et Schl. in Linnæa, v. p. 590.

South Mexico, peak of Orizaba, 9000 to 12,000 feet (*Linden*, 696), limits of phanerogamic vegetation on Popocatepetl, 12,000 feet (*Galeotti*, 3368), Nevada of Toluca, at 11,500 feet, in sheltered plains (*Galeotti*, 3360); Guatemala, Volcan de Fuego, 11,000 to 13,000 feet (*Salvin & Godman*). Hb. Kew.

29. **Lupinus,** sp.

South Mexico, Popocatepetl (*Christy*). Hb. Kew.

30. **Lupinus,** sp. (? *L. cytisoides*, Agardh.)

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*). Hb. Kew.

31. **Lupinus,** sp.

Panama, Boquete (*Seemann*). Hb. Kew.

[*Ulex europæus*, Linn., var. α, introduced into Mexico between Regla and Grande (*Ehrenberg*): Schlechtendal, Linnæa, xii. p. 380. *Spartium junceum*, Linn., introduced in Mexico (*Hegewisch*), hedges in valley of Mexico (*Bourgeau*, 72): Schlechtendal, Linnæa, xii. p. 380; Hb. Kew.]

Tribe TRIFOLIEÆ.

Six genera of herbaceous, rarely woody plants. The genus *Trifolium* has nearly the same area of distribution as the tribe.

[*Melilotus parviflora*, Desf., introduced from Europe, and now common in many parts of Mexico, as Sonora and Chihuahua (*Torrey*), near Mexico (*Ehrenberg*), banks of streams and in wet places, at Acultzingo, 4000 feet, and Misteca Alta, near Peñoles, 7000 feet (*Galeotti*, 3244, 3245).

Medicago denticulata, Willd., occurs as an introduced weed in many parts of Mexico, as fields of Yavesia, Oaxaca, at 7000 feet (*Galeotti*, 3142; *Bourgeau*, 78). *M. lupulina*, Linn., introduced near Mexico (*Ehrenberg*). *M. sativa*, Linn., introduced and now widely spread in Mexico; collected by *Bates*, *Graham*, *Botteri*, *Edwards*, &c.]

3. TRIFOLIUM.

Trifolium, Linn. Gen. Plant. n. 896; Benth. et Hook. Gen. Plant. i. p. 487.

Nearly 280 species have been described by various authors; but there are perhaps not more than 150 well-marked species. They are all herbaceous, and most numerous in the temperate regions of the northern hemisphere. A few occur in the mountains of Tropical America, and a few in Extratropical South America and South Africa.

1. **Trifolium amabile,** H. B. K. Nov. Gen. et Sp. vi. p. 503, t. 593.

North Mexico, San Luis Potosi (*Virlet d'Aoust*, 929; *Parry & Palmer*, 136); South Mexico, valley of Mexico (*Bourgeau*, 76, 577), in meadows near Toluca, at 8280 feet (*Humboldt & Bonpland*), Orizaba (*Botteri*, 407, 705; *Bourgeau*, 2519), Ciudad Real (*Linden*, 749), Real del Monte (*Coulter*, 562), without localities (*Berlandier*, *Sallé*, *Graham*, *Bates*, &c.); Guatemala, Volcan de Fuego, 8300 feet (*Salvin*); Costa Rica, Volcan de Irazu (*Œrsted*), wet meadows, Angostura (*Polakowsky*).—Southward through Colombia and Peru. Hb. Kew.

Var. **longifoliolum,** Hemsl.

Foliolis lineari-oblongis usque 16 lineas longis, obtusis vel utrinque acutis.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 134); South Mexico, Orizaba (*Botteri*, 703). Hb. Kew.

Although very different in its leaves from typical *T. amabile*, we have not succeeded in finding other distinguishing characters.

2. **Trifolium involucratum,** Willd. Sp. Pl. iii. p. 1372; Kunth, Pl. Leg. t. 53.

Trifolium fimbriatum, Lindl. Bot. Reg. t. 1070.

California, Colorado, New Mexico to—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 135), Mabibi, Sonora (*Thurber*), Monterey (*Edwards*), Zacatecas (*Hartweg*); South Mexico, Regla, 6000 to 8000 feet (*Galeotti*, 3352), by ditches and in damp meadows, Omitlan, Mineral del Monte (*Ehrenberg*), near Valladolid, 6000 feet (*Humboldt & Bonpland*), valley of Mexico (*Bourgeau*, 75). Hb. Kew.

3. **Trifolium mexicanum,** n. sp.

Perennis (?), caulibus usque sesquipedalibus, foliolis majusculis ovato-oblongis lanceolato-oblongis vel ellipticis aculeolato-serrulatis, capitulis multifloris ebracteatis, floribus longiuscule pedicellatis, calycis lobis setaceo-subulatis quam tubus triplo longioribus.

Herba perennis vel biennis, cito glabrescens, radice crassa, caulibus adscendentibus usque sesquipedalibus. *Folia* longe petiolata, trifoliolata; foliola brevissime petiolulata, lanceolato-oblonga, ovato-oblonga, elliptica vel fere orbicularia, usque 16 lin. longa et 8 lin. lata, obtusa vel mucronulato-obtusa, plus minusve aculeolato-serrulata; stipulæ latæ, integræ vel hic illic serrulatæ, setaceo-acuminatæ. *Flores* subumbellati, 4–5 lin. longi; umbellæ multifloræ (20–40), ebracteatæ, pedicellis 1–3 lin. longis; calycis lobi setaceo-subulati, tubo triplo longiores; petala ut in *T. amabili,* sed fere duplo majora; ovarium biovulatum.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 137); South Mexico, Orizaba (*Botteri*, 704), without locality (*Graham*), Real del Monte, Zimapan, &c. (*Coulter*). Hb. Kew.

This species has nearly all the floral characters of *T. amabile*, except that the flowers are larger and the calyx-lobes relatively longer; but it is altogether a more robust plant, with large leaves and numerous distinctly stalked flowers in each head or umbel. Possibly it may be only a vigorous state of *T. amabile*.

4. **Trifolium pauciflorum,** Nutt. in Torr. & Gray, Fl. N. Am. i. p. 319.

Utah southward to—North Mexico, Sonora.

5. **Trifolium reflexum,** Linn. Sp. Pl. p. 1079.

Florida, Arkansas, Texas.—South Mexico, near Jalapa &c. (*Schiede & Deppe*), Mineral del Monte (*Ehrenberg*).

We have not seen Mexican specimens of this species.

6. **Trifolium rhombeum,** Schauer, in Linnæa, xx. p. 740.

South Mexico, locality not indicated (*Aschenborn*, 164).

7. **Trifolium variegatum,** Nutt. in Torr. & Gray, Fl. N. Am. i. p. 317.

California.—North Mexico, Sonora (*Thurber*).

Tribe LOTEÆ.

Eight genera are included in this tribe; and the species are most numerous in the Mediterranean, but are widely dispersed. They are mostly herbs, rarely shrubby.

4. HOSACKIA.

Hosackia, Dougl. ex Benth. in Bot. Reg. t. 1257; Benth. et Hook. Gen. Plant. i. p. 491.

An exclusively American genus of herbs and undershrubs, consisting of about twenty-five species, mostly natives of Western North America from Mexico to British Columbia.

1. **Hosackia angustifolia,** G. Don, Gen. Syst. ii. p. 200.

Hosackia mexicana, Benth.

South Mexico, Real del Monte (*Coulter*, 621), woods at 6000 to 7500 feet, Oaxaca (*Galeotti*, 3169), without precise locality (*Jurgensen*, 660).

Var. foliis latioribus, floribus pallidioribus, an species distincta?, Seem. Bot. Voy. 'Herald,' p. 279.

North Mexico, Sierra Madre (*Seemann*, 2180), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 140). Hb. Kew.

2. **Hosackia brachycarpa,** Benth. Pl. Hartw. p. 306.

California.—North Mexico, Sonora.

3. **Hosackia puberula,** Benth. Pl. Hartw. p. 305.

Texas, New Mexico, and California to—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 141), mountains of Chihuahua (*Potts*), without habitat (*Halsted*).

Var. **nana,** A. Gray.

North Mexico, Ojo de Vaca, Chihuahua (*Thurber*), Sonora (*Smith*).

4. **Hosackia purshiana,** Benth. in Bot. Reg. sub t. 1257.

Hosackia elata, floribunda, mollis et *pilosa,* Nutt.

North Carolina, Missouri, and Arkansas to—North Mexico, Sonora (*Wright*).

5. **Hosackia rigida,** Benth. Pl. Hartw. p. 305.

Hosackia puberula, A. Gray, Pl. Wright. ii. p. 42, nec Benth.

California, New Mexico.—North Mexico, Ojo de Vaca, Chihuahua (*Thurber*).

Tribe GALEGEÆ.

Upwards of fifty genera, widely dispersed. The species are shrubby or herbaceous; a few only arboreous.

5. PSORALEA.

Psoralea, Linn. Gen. Plant. n. 894; Benth. et Hook. Gen. Plant. i. p. 491.

Herbs and shrubs. Nearly 100 species, of which forty are South-African, eleven Australian, scarcely six South-American, and ten are dispersed in the tropical and temperate regions of Asia, Europe, and North Africa.

1. **Psoralea esculenta,** Pursh, Fl. Am. Sept. ii. p. 475, t. 22.

Western North America from the Red River southward.—North Mexico, Sonora (*Parry*).

2. **Psoralea floribunda,** Nutt. in Torr. & Gray, Fl. N. Am. i. p. 298.

Oregon and Missouri to—North Mexico, Sonora (*Torrey*).

3. **Psoralea melanocarpa,** Benth. MSS. in Hb. Kew.

Puberula, ramis teretibus, foliis petiolatis pinnatim trifoliolatis, foliolis ovato-lanceolatis mucronulatis supra densissime glanduloso-punctatis, stipulis lineari-subulatis, racemis paucifloris densis

longe pedunculatis, floribus parvis brevissime pedicellatis, calyce alte 5-partito, carina quam alæ et vexillum breviore, ovario superne pubescente, legumine sicco nigro tuberculato grosse reticulato.

Herba vel suffrutex, ramis teretibus, graciliusculis, puberulis. *Folia* petiolata, pinnatim trifoliolata, 3–5-pollicaria, petiolo et rhachi gracili; foliola breviter petiolulata, membranacea, ovato-lanceolata, 1–2½-pollicaria, lateralia minora, basi rotundata, apice obtusa et mucronulata, utrinque parcissime puberula, supra densissime glanduloso-punctata; stipulæ lineari-subulatæ, ad 4 lineas longæ, deciduæ. *Flores* vix 4 lin. longi, racemosi, brevissime pedicellati; racemi pauciflori, densi, longe pedunculati, pedunculis gracilibus nudis, 3–6-pollicaribus; calyx puberulus, glandulosus, alte 5-partitus, lobis lanceolatis, acutis, trinerviis, 2 superioribus brevioribus, inferiore longissimo; petala quam calyx paulo longiora; vexillum oblongo-obovatum, inappendiculatum; carina et alæ graciliter unguiculatæ, apice rotundatæ, carina quam vexillum et alæ brevior; ovarium superne pilosum. *Legumen* sessile, oblique ovatum, cornutum, ad semipollicare, siccum nigrum, tuberculatum et grosse reticulatum.

South Mexico, Zimapan (*Coulter*, 561). Hb. Kew.

4. **Psoralea pentaphylla,** Linn. Sp. Pl. p. 1076; Juss. Act. Acad. Paris. 1744, p. 381, t. 17.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 142); South Mexico, Leon (*Hartweg*). Hb. Kew.

6. APOPLANESIA.

Apoplanesia, Presl, Symb. Bot. i. p. 63; Benth. et Hook. Gen. Plant. i. p. 492.

The only species; a shrub.

1. **Apoplanesia paniculata,** Presl, Symb. Bot. i. p. 63, t. 41.

Microlobium glandulosum, Liebm. in Vidensk. Meddel. 1853, p. 104.

South Mexico, Santiago Estata, Oaxaca (*Liebmann*, 120). Hb. Kew.

7. MARINA.

Marina, Liebm. in Vidensk. Meddel. 1853, p. 103; Benth. et Hook. Gen. Plant. i. p. 492.

The only species; a slender annual herb:—

1. **Marina gracilis,** Liebm. in Vidensk. Meddel. 1853, p. 103.

South Mexico, in dry barren fields, near Equitla, in the valley of Oaxaca (*Liebmann*).

8. EYSENHARDTIA.

Eysenhardtia, H. B. K. Nov. Gen. et Sp. vi. p. 489 (*Viborquia,* Ortega, Dec. p. 66, t. 9); Benth. et Hook. Gen. Plant. i. p. 492.

A genus of four or five shrubby species, endemic in Texas and Mexico.

1. **Eysenhardtia adenostylis,** Baill. Adans. ix. p. 239.

Guatemala (*Savaye*). Hb. Paris.

2. **Eysenhardtia amorphoides,** H. B. K. Nov. Gen. et Sp. vi. p. 491, t. 592.

NEW MEXICO, TEXAS.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 143), Monterey (*Eaton & Edwards*), Cerro de Pinal (*Seemann*, 1535), Coahuila, Chihuahua, and Sonora (ex *Torrey*), Monterey (*Berlandier*, 630); SOUTH MEXICO, Zimapan (*Coulter*, 626), Misteca Alta (*Galeotti*, 3236), Tacubaya (*Bourgeau*, 82; *Schaffner*, 221; *Bilimek*, 108), between Mexico and Toluca (*Andrieux*, 449), near San Augustin de las Cuevas and Guanaxuato, 6600 to 7200 feet (*Humboldt & Bonpland*), Chapultepec, &c. (*Ehrenberg*). Hb. Kew.

3. **Eysenhardtia spinosa,** Engelm. in A. Gray, Pl. Lindh. p. 174.

NORTH MEXICO, on Lake Encinillas, north of Chihuahua (*Wislizenus*).

4. **Eysenhardtia,** sp.

SOUTH MEXICO, Valladolid, Michoacan, 7000 to 8000 feet (*Galeotti*, 3356). Hb. Paris.

9. AMORPHA.

Amorpha, Linn. Gen. Plant. n. 861; Benth. et Hook. Gen. Plant. i. p. 492.

About eight shrubby species, endemic in North America.

1. **Amorpha californica,** Nutt. in Torr. & Gray, Fl. N. Amer. i. p. 306; Watson, Bot. Calif. i. p. 140.

Amorpha fruticosa, Torr. Bot. U. S. Mex. Bound. Surv. p. 53, nec Linn.

CALIFORNIA.—NORTH MEXICO, Mabibi, Sonora (*Thurber*).

2. **Amorpha lævigata,** Nutt. in Torr. & Gray, Fl. N. Amer. i. p. 306.

Var. **pubescens,** Gray, Pl. Wright. i. p. 49.

NORTH MEXICO, on the Rio Grande and southward (*Schott*).

The typical plant is a native of ARKANSAS.

3. **Amorpha rabiæ,** Llav. et Lex. Nov. Veg. Descr. i. p. 22.

MEXICO.

10. DALEA.

Dalea, Linn. Hort. Cliff. p. 363; Benth. et Hook. Gen. Plant. i. p. 493.

An American genus of herbs and shrubs. Upwards of 100 species, whereof two or three are Chilian, ten (or more) grow in the Andes of South America, and two in the Galapagos Islands; all the rest inhabit Central America, Mexico, and the Southern United States.

We have spent a considerable time over this genus; but it requires thorough revision. The forms are exceedingly numerous; and the number of species is probably nearly as high as the named forms enumerated below.

1. **Dalea acutifolia,** DC. Prodr. ii. p. 245; Calques des Dess. Fl. Mex. 229.
SOUTH MEXICO, San Nicolas, valley of Mexico (*Bourgeau*, 938), without localities (*Graham, Keerl*). Hb. Kew.

2. **Dalea alopecuroides,** Nutt. Gen. Am. ii. p. 101; Cav. Ic. i. t. 86.
Dalea leporina, Ait.
MISSOURI and ILLINOIS.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 144), Chihuahua (*Potts*), Santa Cruz, Sonora (*Thurber, Smith*); SOUTH MEXICO, Acapulco (*Sinclair*), ravines of Real del Monte, 5000 feet, and Misteca Alta, 7000 feet (*Galeotti*, 3348, 3238), near Los Humeros de los Retumbados (*Schiede & Deppe*), Orizaba (*Botteri*, 621), San Nicolas, valley of Mexico (*Bourgeau*, 936), San Angel (*Bourgeau*, 771), Chapultepec (*Bilimek*, 716), region of Orizaba (*Bourgeau*, 2399); GUATEMALA, near Santa Maria, Volcan de Agua, 6000 to 7000 feet (*Salvin & Godman*, 332); COSTA RICA, on the sandy banks of streams (*Œrsted*), on the railroad, San José (*Polakowsky*).—COLOMBIA. Hb. Kew.

3. **Dalea argyræa,** A. Gray, Pl. Wright. i. p. 47.
TEXAS and NEW MEXICO.—NORTH MEXICO, Sonora (*Wright*), San Antonio de las Alanzanes (*Gregg*). Hb. Kew.

4. **Dalea argyrostachys,** Hook. et Arn. Bot. Beech. Voy. p. 285.
MEXICO. Hooker and Arnott give no locality for this species.

5. **Dalea ayavacensis,** H. B. K. Nov. Gen. et Sp. vi. p. 486?
SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 1566). Hb. Kew.
The typical plant is a native of the States of COLOMBIA.

6. **Dalea albiflora,** A. Gray, Pl. Wright. ii. p. 38.
NEW MEXICO.—NORTH MEXICO, San Pedro and Barbocomori (*Wright*), San Pedro, Sonora (*Thurber*). Hb. Kew.

7. **Dalea berlandieri,** A. Gray, in Proc. Am. Acad. v. p. 177, in adnot.
NORTH MEXICO, San Carlos Tamaulipas (*Berlandier*, 942, 2372). Hb. Kew.

8. **Dalea brachystachys,** A. Gray, Pl. Wright. ii. p. 39.
NEW MEXICO.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 159), Sonora (*Thurber*), on the Sonoita and San Pedro (*Wright*). Hb. Kew.

9. **Dalea calycosa,** A. Gray, Pl. Wright. ii. p. 40.
NORTH MEXICO, hills near deserted rancho, Sonora (*Wright*).

10. **Dalea canescens,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 43.
SOUTH MEXICO, near Tehuacan de las Granadas, Puebla, 5500 feet (*Galeotti*, 3219).
Hb. Kew.

11. **Dalea cinerea,** Moric. ex Benth. MSS. in Hb. Kew.

Texas.—North Mexico, in mountains near San Carlos, Tamaulipas (*Berlandier*); South Mexico, Chiapas (*Ghiesbreght*, 581).

12. **Dalea citriodora,** Willd. Sp. Pl. iii. p. 1339.

Psoralea citriodora, Cav. Ic. iii. p. 36, t. 271.
?*Dalea polyphylla,* Mart. et Gal.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 145); South Mexico, near Los Humeros de Los Retumbados (*Schiede & Deppe*), Regla (*Ehrenberg*), State of Mexico (*Hegewisch*), mountains of Oaxaca, 5000 to 7000 feet (*Galeotti*, 3150), valley of Mexico (*Bourgeau*, 770, 937; *Schaffner*, 119, 33), near Guanaxuato (*Mender*).—Colombia. Hb. Kew.

13. **Dalea cliffortiana,** Willd. Sp. Pl. iii. p. 1336; Linn. Hort. Cliff. p. 363, t. 21.

South Mexico, between Mesachica and Mapilque, in meadows (*Schiede & Deppe*).

14. **Dalea comosa,** Schl. in Linnæa, xii. p. 289.

South Mexico, Mineral del Monte, Cuesta Blanca (*Ehrenberg*).

15. **Dalea crassifolia,** n. sp.

Fruticosa vel suffruticosa, ramis elongatis rectis crassiusculis, foliolis 25–35-jugis glaberrimis glaucis nigro-punctatis parvis oblongis creberrimis rhachique crassis, floribus densissime spicatis, spicis multifloris bracteatis, bracteis ovato-caudatis cito deciduis, calycis lobis lineari-subulatis, vexillo inappendiculato, staminibus 10, ovario piloso biovulato.

Frutex vel *suffrutex*, ramis elongatis, rectis, crassiusculis, striatis, glabris. *Folia* crebra, fere sessilia, ad bipollicaria, glaberrima, glauca, nigro punctata; foliola 25–35-juga, creberrima, sessilia, oblonga, 1½–2 lineas longa, obtusa (in siccis supra concava, subtus convexa) rhachique crassa, subcarnosa, evenia. *Flores* albo-purpurei vel albo-rosei vel flavo-rosei, densissime spicati; spicæ multifloræ, longiuscule pedunculatæ, bracteatæ, bracteis ovato-caudatis, sericeo-pilosis quam flores longioribus, cito deciduis; calycis longissime denseque fulvo-sericeo-pilosi lobi lineares, subulati, tubo longiores; vexillum longe graciliterque unguiculatum, cordatum, inappendiculatum, carina et alæ oblique ellipticæ, unguibus tubo stamineo ad medium adnatis sed facile diremptis; stamina 10, dorsali libero longiore; ovarium pilosum, biovulatum, stylo piloso demum exserto. *Fructus* maturus ignotus.—*D. pectinata,* H. B. K. ? Seem. Bot. Voy. 'Herald,' p. 279.

North Mexico, Sierra Madre (*Seemann*, 2190). Hb. Kew.

Allied to *D. pectinata*, H. B. K., but easily distinguished from that species by its stouter habit, less numerous, broader, thicker leaflets, thicker rhachis, more numerous flowers in the spikes, and shorter stouter peduncles.

16. **Dalea decora,** Schauer, in Linnæa, xx. p. 743.

South Mexico, Oaxaca (*Aschenborn*, 255, 270).

17. **Dalea diffusa,** Moric. in Mém. Genève, vi. p. 533.

Dalea gracilis, Hook. & Arn.
Dalea ramosissima, Mart. et Gal.
Carroa diffusa, Presl.
Carroa glandulosa, Presl, Sym. Bot. ii. t. 71.

Texas.—North Mexico, San Luis Potosi to Tampico (*Palmer*, 1047), Cerro de Pinal (*Seemann*); South Mexico, Vera Cruz to Orizaba (*Müller*); Acapulco (*Hinds*), woods on the Pacific coast, Oaxaca (*Galeotti*, 3162), Tepic (*Barclay*, *Sinclair*), valley of Cordova (*Bourgeau*, 1757), region of Orizaba (*Bourgeau*, 3364); Guatemala, Salama, 3000 feet (*Salvin & Godman*), Camino del Sapote (*Bernoulli*, 235); Nicaragua, Segovia (*Œrsted*).—Also in Venezuela. Hb. Kew.

18. **Dalea domingensis,** DC. ii. p. 246.

Dalea vulneraria, var. *α. brevidens,* Œrst.

Texas; New Mexico.—North Mexico, Victoria de Tamaulipas (*Berlandier*, 2266), San Luis Potosi to Tampico (*Palmer*, 1049); South Mexico, valley of Cordova (*Bourgeau*, 1540), Vera Cruz to Orizaba (*Müller*), savannas at 3000 feet, Cordillera of Vera Cruz (*Galeotti*, 3280), Papantla (*Schiede & Deppe*); Guatemala, mountains (*Hartweg*). —Southward to Venezuela and Colombia. Hb. Kew.

19. **Dalea ehrenbergii,** Schl. in Linnæa, xii. p. 290.

South Mexico, in calcareous soil near Grande (*Ehrenberg*), Oaxaca (*Aschenborn*, 479).

20. **Dalea elata,** Hook. et Arn. Bot. Beech. Voy. p. 416, nec Mart. et Gal.

South Mexico, Acapulco (*Sinclair*). Hb. Kew.

21. **Dalea elata,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 41, nec Hook. et Arn.

North Mexico, Sierra Madre (*Seemann*); South Mexico, Mirador (*Linden*, 721), savannas of Zacuapan, at 2000 to 3000 feet (*Galeotti*, 3264). Hb. Kew.

This is probably a variety of *D. citriodora.*

22. **Dalea emoryi,** A. Gray, Pl. Thurb. p. 315.

Colorado; Arizona.—North Mexico, Sonora (*Thurber*). Hb. Kew.

23. **Dalea ervoides,** Benth. in Hemsley, Diag. Pl. Nov. pars 1, p. 6.

Herbacea, annua, ramosa, eglandulosa, ramis gracilibus, foliis strigoso-hispidis, foliolis 1–2-jugis interdum 3-jugis, distantibus lineari-lanceolatis acutis, floribus parvis spicatis, spicis pauci-floris congestis bracteatis, bracteis ovato-lanceolatis valde acuminatis calycibusque strigilloso-hispidis.

Herba annua, habitu *Ervi* cujusdam, erecta vel diffusa, 3–12-pollicaria, ramosa vel fere simplicicaulis, ramis teretibus gracilibus debilibus. *Folia* petiolata, eglandulosa, utrinque plus minusve fulvo-strigilloso-hispida, rhachi tenui, usque 9 lin. longa; foliola 3–7, breviter petiolulata, deflecta, distantia, lineari-lanceolata, 3–6 lin. longa, acuta; stipulæ elongato-subulatæ, persistentes. *Flores* vix 3 lin. longi, purpurei, spicati; spicæ paucifloræ, breves, congestæ, longe graciliterque pedunculatæ, bracteatæ, bracteis ovato-lanceolatis, valde acuminatis, calycem æquantibus calycibusque eglandulis et strigilloso-hispidis; calyx 5-partitus; lobi lineari-subulati, tubo æquilongi; tubus 10-costatus, intra costas pellucidus, costis nigris; vexillum liberum, graciliter unguiculatum, limbo cordato-orbiculari; alæ et carina ellipticæ quam calyx paulo longiores, unguibus tubo stamineo confluentibus; stamina 10, filamentis ad medium connatis; ovarium strigillosum, biovulatum, stylo filiformi, stigmate acuto.

South Mexico, Real del Monte (*Coulter*, 537), Cuantepec (*Bourgeau*, 1054; *Tate*, without locality). Hb. Kew.

Berlandier's no. 2053, from Texas, is probably the same species; but the specimens at Kew are in a very young state.

In habit this species approaches *D. brachystachys* and *D. polygonoides*, A. Gray; but both of these species are conspicuously glandular, independently of other differences. Possibly it may be the same as *D. inconspicua*, Schauer, of which we have seen no specimens.

24. **Dalea eysenhardtioides,** Hemsley, Diag. Pl. Nov. pars 1, p. 6.

Fruticosa, fulvo-puberula, ramulis gracilibus, foliolis 4–6-jugis obovato-oblongis mucronulatis petiolulatis, floribus albis parvis spicatis, calyce 10-costato præter marginem glabro, vexillo cucullato-orbiculari, filamentis vix ad medium connatis, antheris inconspicue glandulosis, ovario (an semper?) uniovulato.

Frutex erectus, glaber, ramulis gracilibus, teretibus, fulvo-puberulis, obsolete glandulosis. *Folia* 1–2-pollicaria, glabra; foliola 7–13, interdum pauciora, distincte petiolulata, obovato-oblonga, 6–8 lin. longa, mucronulata, utrinque nigro punctulata; stipulæ subulatæ, cito deciduæ. *Flores* sessiles, albi, odorati, parvi, spicati, bracteati; spicæ angustæ, elongatæ, paniculatæ, bracteis calyci æqualongis, lanceolato-subulatis, ante anthesin deciduis; calyx fuscus, nitidus, 10-costatus, vix 1 lin. longus, leviter obliquus, 5-dentatus, dentibus parvis, cuspidulatis, furfuraceis, tubo glabro; petala subæquilonga, ad $2\frac{1}{2}$ lin. longa; vexillum unguiculatum, liberum, cucullato-orbiculare; alæ et carina oblongæ; stamina 10, petalis breviora, filamentis vix ad medium connatis, antheris inconspicue glandulosis; ovarium glabrum (an semper?), uniovulatum, stylo filiformi, stigmate punctiformi.

South Mexico, woods near the Pacific Ocean in the Cordillera of Oaxaca, at an elevation of 4000 to 7000 feet (*Galeotti*, 7013; *Ghiesbreght*). Hb. Kew.

Allied to the North-American *D. leucostachys.*

25. **Dalea filiformis,** A. Gray, Pl. Wright. ii. p. 39.

New Mexico.—North Mexico, between Janos and Santa Maria river, Sonora (*Schott*). Hb. Kew.

26. **Dalea flavorosea,** DC. Prodr. ii. p. 246; Calques des Dess. Fl. Mex. 233.

Mexico.

27. **Dalea flava,** Mart. et Gal. (Char. emend.)

Herbacea, ramosa, ramis angulatis pubescentibus, foliolis 8–13-jugis cano-villosulis parvis sessilibus confertis oblongo-ellipticis subtus conspicue nigro-punctulatis, floribus parvis dense spicatis, calyce villoso 10-costato inter costas glandulis magnis lineari-oblongis consperso 5-partito petala æquante, carina alisque tubo stamineo alte adhærentibus.

Herba annua, erecta, ramosa, ramis angulatis pubescentibus. *Folia* breviter petiolata, cano-villosula, angusta, usque bipollicaria, rhachi tenui; foliola 17–25, conferta, sessilia, oblongo-elliptica vel obovata, 2–3 lin. longa, subtus conspicue nigro punctata; stipulæ subulatæ, 1–$1\frac{1}{2}$ lin. longæ. *Flores* lutei, sericeo-villosi, vix 3 lin. longi, spicati, bracteati; spicæ breves, densæ, bracteis lanceolatis, acuminatis, quam calyx longioribus; calyx villosus, 5-partitus; tubus prominenter 10-costatus, inter costas glandulis magnis, lineari-oblongis munitus; lobi lineari-subulati, inter se

subinæquales, petala fere æquantes; vexillum liberum, longe unguiculatum, limbo orbiculari-cucullato; carina et alæ oblique oblongæ, unguibus tubo stamineo adhærentibus; stamina 10, filamentis alte cohærentibus; ovarium villosum, biovulatum, stylo filiformi, stigmate acuto.

South Mexico, humid ravines of Mirador and Zacuapan, at 3000 feet (*Galeotti*, 3405). Hb. Kew.

This species is very near our *D. similis*, and is here described in full for comparison with that species. The original description is very imperfect and quite insufficient to identify the plant; but there are typical specimens at Kew, from which the above description was drawn up.

28. **Dalea formosa,** Torr. in Ann. Lyc. N. York, ii. p. 178; Emory, Notes, t. 1.

Texas; California; New Mexico.—North Mexico, Coahuila, Sonora (*Torrey*). Hb. Kew.

29. **Dalea frutescens,** A. Gray, Pl. Lindh. ii. p. 175.

Texas; New Mexico.—North Mexico, near Monterey (*Eaton & Edwards*, 16). Hb. Kew.

30. **Dalea greggii,** A. Gray, Pl. Thurb. p. 315.

North Mexico, Sierra del Pajarito, Sonora (*Schott*), Cerro Gordo, Durango (*Thurber*, 827), dry hills near Buena Vista, Coahuila, and Cerro Gordo (*Gregg*). Hb. Kew.

31. **Dalea guatemalensis,** Benth. MSS. in hb. Kew.

Guatemala (*Wendland*). Hb. Kew.

Very near, if not the same as, *D. phymatodes*, Willd.

32. **Dalea hypoglottidea,** DC. Prodr. ii. p. 245.

Mexico.

33. **Dalea inconspicua,** Schauer in Linnæa, xx. p. 744.

South Mexico, Oaxaca (*Aschenborn*, 461).

34. **Dalea insignis,** Hemsley, Diag. Pl. Nov. pars 1, p. 7. (Tab. XV.)

Herbacea, erecta, robusta, glabra, foliis amplis, foliolis 4–6-jugis, stipulis semisagittatis amplissimis scariosis nigro-venosis aristatis, floribus dense spicatis, bracteis magnis stipulis simillimis flores amplectentibus.

Herba glabra, robusta, erecta. *Folia* 3–4-pollicaria, rhachi gracili; foliola 9–13, distantia, breviter petiolulata, oblongo-elliptica, 6–9 lin. longa, cuspidato-mucronata, subtus dense punctulata; stipulæ scariosæ, nigro-venosæ, ad 6 lin. longæ, semisagittatæ, apice aristatæ, persistentes, petiolo basi adhærentes. *Flores* purpurei, dense spicati, bracteati; bracteæ amplæ, stipulis simillimæ, 7-nervæ, longe aristatæ, convolutæ, flores amplectentes, arista rigidiuscula, curvata; calyx membranaceus, 5-dentatus, 5-costatus, dentibus brevibus triangularibus obtusis; petala fere æquilonga; vexillum liberum, longe graciliterque unguiculatum, suborbiculatum; alæ et carina tubo stamineo ad medium adhærentes, priores ovato-oblongæ, basi leviter obliquæ, auriculatæ; stamina 10, monadelpha, omnia antherifera; ovarium glabrum, 2-ovulatum, ovulis collateralibus, stylo filiformi, stigmate punctiformi.

South Mexico, Vera Cruz to Orizaba (*Müller*, 228). Hb. Kew.

A very remarkable and distinct species in its large stipules and bracts; but there appears to be no floral character to separate it from this genus.

EXPLANATION OF TAB. XV.

Portion of plant, natural size. Fig. 1, a flower enclosed in the bract; 2, standard; 3, wing; 4, keel, the claw represented too long; 5, andrœcium, more enlarged and showing the scar where the petals were attached; 6, ovary and calyx; 7, bract.

35. **Dalea lachnantha,** Schauer in Linnæa, xx. p. 743.

South Mexico, in grassy places, mountains of Oaxaca (*Aschenborn*, 274).

36. **Dalea lachnostachys,** A. Gray, Pl. Wright. i. p. 46.

Texas; New Mexico.—North Mexico, Chihuahua (*Potts*), Sierra Madre (*Seemann*, 2182). Hb. Kew.

37. **Dalea lævigata,** A. Gray, Pl. Wright. i. p. 39.

Texas; New Mexico.—North Mexico, between Janos and Santa Maria river (*Bigelow*), Santa Cruz, Sonora (*Smith*), on the Chiricahui mountains and on the Barbacomori (*Wright*).

38. **Dalea lagopus,** Willd. Sp. Pl. iii. p. 1340.

Psoralea lagopus, Cav. Ic. t. 86.

Mexico, without locality (*Aschenborn*, 459).

39. **Dalea lanuginosa,** Nutt. in Torr. & Gray, Fl. N. Am. i. p. 307.

Texas; New Mexico.—North Mexico, Coahuila and Chihuahua (*Torrey*).

40. **Dalea lasiostachya,** Benth. Pl. Hartw. p. 11.

? *Dalea argyrostachys,* Hook. et Arn.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 149, 150, and 155); South Mexico, without locality (*Graham*), Chiapas (*Ghiesbreght*), Tepic (*Lay & Collie*). Hb. Kew.

41. **Dalea laxiflora,** Schl. in Linnæa, xii. p. 293.

Mexico, without any precise locality (*Hegewisch*).

42. **Dalea leptoclados,** Benth. MSS. in hb. Kew.

South Mexico, Zimapan (*Coulter*, 534). Hb. Kew.

43. **Dalea leucostachys,** A. Gray, Pl. Fendl. i. p. 32, adnot.

North Mexico, Cosiquiriachi, Sierra Madre (*Wislizenus*).

44. **Dalea leucostoma,** Schl. in Linnæa, xii. p. 294.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 153); South Mexico, Real del Monte (*Coulter*, 546; *Hartweg*, 282), Chiapas (*Linden*, 744), Oaxaca (*Aschenborn*), Montezuma, near Cuantepec (*Bourgeau*, 1055). Hb. Kew.

45. **Dalea lutea,** Willd. Sp. Pl. iii. p. 1341.

Dalea ovalifolia, Orteg. Dec. p. 30, t. 3.

Psoralea lutea, Cav. Ic. t. 325.

South Mexico, Villalpando (*Mender*), Puebla (*Aschenborn*, 448). Hb. Kew.

46. **Dalea macrostachya,** Moric. in Mém. Genève, vi. p. 534, t. 5.

New Spain.

47. **Dalea macrotropis,** Schauer in Linnæa, xx. p. 742.

South Mexico, mountains of Oaxaca (*Aschenborn*, 311).

48. **Dalea melantha,** Schauer in Linnæa, xx. p. 746.

South Mexico, Oaxaca (*Aschenborn*, 204).

49. **Dalea microphylla,** H. B. K. Nov. Gen. et Sp. vi. p. 482.

South Mexico, in the neighbourhood of Tacubaya (*Schaffner*, 15), woods at 6000 to 7000 feet, Oaxaca (*Galeotti*, 3152), without localities (*Mairet*, *Alaman*, *Bates & Tate*), valley of Santa Fé (*Bourgeau*, 327), Chapultepec and Pedregal (*Bilimek*, 119, 118, 121, 122).—Peru. Hb. Kew.

50. **Dalea mollis,** Benth. Pl. Hartw. p. 306; A. Gray, Pl. Wright. i. p. 47.

California; New Mexico; Texas.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 161). Hb. Kew.

51. **Dalea mucronata,** DC. Prodr. ii. p. 246.

Dalea aristata, Benth. Pl. Hartw. p. 11.

South Mexico, without localities (*Graham*, *Parkinson*). Hb. Kew.

52. **Dalea mutabilis,** Willd. Sp. Pl. iii. p. 1339; Bot. Mag. t. 2486.

Dalea bicolor, Willd. Hort. Berol. ii. t. 89.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 166); South Mexico, Zimapan (*Coulter*, 538), Orizaba (*Botteri*, 678), Chalco (*Andrieux*, 448), Llanos de Perote (*Schiede*), Guaxataco (*Plotz*), valley of Mexico (*Bourgeau*, 73), Chapultepec (*Bilimek*, 123). Hb. Kew.

53. **Dalea nana,** Torr. Pl. Fendl. p. 31.

Texas; New Mexico; California.—North Mexico (ex *Brewer & Watson*, Bot. Calif.).

54. **Dalea naviculifolia,** Hemsley, Diag. Pl. Nov. pars 1, p. 7.

Fruticosa, ramis gracilibus foliisque glanduloso-punctatis, foliolis parvis 7–10-jugis breviter petiolulatis crebris oblongis acutis supra concavis sparse pilosis subtus glaucis convexis carinatis nigro-punctatis, floribus (albis?) minimis spicatis, spicis rufo-pubescentibus, calyce spadiceo 10-costato dentibus exceptis glaberrimo.

Frutex glandulosus, ramis gracilibus teretibus. *Folia* breviter petiolata, ad pollicaria; foliola 15–21, breviter petiolulata, oblonga, naviculiformia, 1–1½ lin. longa, crebra, subtus glauca, nigro punctata, supra sparse pilosa; stipulæ minutæ, subulatæ. *Flores* ad 2 lin. longi (albi?), laxe spicati, bracteati; spicæ elongatæ, pedunculatæ, rufo-pubescentes, bracteis ovatis, longe acuminatis,

quam calyx brevioribus persistentibus; calyx spadiceus, pellucidus, 10-costatus, glandulosus, brevissime 5-dentatus, dentibus rufo-villosis; vexillum orbiculatum, liberum, petalis ceteris ellipticis, tubo stamineo adhærentibus, alis basi auriculatis; ovarium glabrum, 2-ovulatum.

South Mexico, without locality (*Bates*). Hb. Kew.

This is near *D. Schaffneri*, &c., but is easily distinguished by its boat-shaped leaves sparsely hairy inside (that is, on the upper surface).

55. **Dalea nigra,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 43.

Dalea elegans, Hook. et Arn.

South Mexico, Mirador (*Linden*, 720; *Galeotti*, 3263), Orizaba (*Botteri*, 623), valley of Cordova (*Bourgeau*, 1542); Guatemala, without localities (*Skinner & Bernoulli*, 137). Hb. Kew.

56. **Dalea nutans,** Willd. Sp. Pl. iii. p. 1339.

Dalea crenulata, Hook. et Arn.

Psoralea nutans, Cav. Ic. t. 201.

South Mexico, Oaxaca (*Ghiesbreght*), valley of Mexico (*Bourgeau*, 326), Zimapan (*Coulter*, 544), Chiapas (*Ghiesbreght*, 586), without localities (*Bates*, *Graham*, *Hahn*, *Keerl*, *Beechey*, *Mender*, *and Berlandier*). Hb. Kew.

57. **Dalea pectinata,** Kunth, Pl. Leg. p. 169, t. 49.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 146); South Mexico, near Villalpando, 7980 feet (*Humboldt & Bonpland*), Aguas Calientes (*Hartweg*). Hb. Kew.

58. **Dalea phymatodes,** Willd. Sp. Pl. iii. p. 1338.

Psoralea phymatodes, Jacq. Ic. Rar. iii. t. 563.

Dalea vulneraria, var. γ, Œrsted.

North Mexico, Monterey (*Edwards*); South Mexico, Zimapan (*Coulter*), valley of Cordova (*Bourgeau*, 1540); Nicaragua, neighbourhood of Granada (*Levy*), Segovia (*Œrsted*, 5, 6).—Venezuela and Colombia. Hb. Kew.

59. **Dalea platystegia,** Schauer in Linnæa, xx. p. 741.

Mexico (*Aschenborn*, 462).

60. **Dalea pogonathera,** A. Gray, Pl. Fendl. i. p. 31.

Texas.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 163), Monterey (*Eaton & Edwards*), near Chihuahua (*Potts*, *Gregg*), Matamoras to San Patricio (*Berlandier*, 2023). Hb. Kew.

61. **Dalea polycephala,** Benth. MSS. in hb. Kew.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 160); South Mexico, Real del Monte (*Coulter*, 533), without locality (*Jurgensen*, 618). Hb. Kew.

Scarcely distinguishable from *D. ramosissima.*

62. **Dalea polyphylla,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 44.

Dalea citriodora, Hook. et Arn. nec Willd.?

Very common in GUATEMALA and MEXICO, occurring in nearly all collections (*Bourgeau*, 775; *Müller*, 1090; *Bernoulli*, 172; *Galeotti*, 3164; *Salvin & Godman*, 43; *Coulter*, 542).—And in COLOMBIA. Hb. Kew.

63. **Dalea procumbens,** DC. Prodr. ii. p. 246; Calques des Dess. Fl. Mex. 229.

MEXICO, Real del Monte to Zacatecas (*Coulter*, 536), Leon (*Mender*). Hb. Kew.

64. **Dalea prostrata,** Orteg. Dec. p. 69.

MEXICO, Zacatecas (*Hartweg*), without localities (*Tate & Aschenborn*). Hb. Kew.

65. **Dalea pulchella,** Moric. (Char. emend.)

Fruticosa, ramosa, pubescens, tuberculato-glandulosa, ramulis gracilibus, foliolis parvis 1–3-jugis cano vel cinereo-tomentosis, floribus subcapitatis purpureis vel roseis, petalis omnibus fere liberis.

Frutex pluripedalis, ramosus, ramis gracilibus teretibus, tuberculato-glandulosis. *Folia* breviter petiolata, semipollicaria; foliola 3–7, breviter petiolulata, obovato-spathulata vel oblonga, ad 3 lin. longa, cano vel cinereo sericeo-tomentosa, glanduloso-punctata. *Flores* venusti, purpurei vel rosei, capitati, semipollicares, bracteis calycibusque rufo-pubescentibus; calyx breviter 5-dentatus; petala omnia longe unguiculata et a basi fere libera; vexillum cucullato-orbiculatum, petala cetera oblongo-elliptica; carina ad 6 lin. longa; stamina 10, filamentis ultra medium coalitis; ovarium villosum, 2-ovulatum.—*Dalea pulchella,* Moric. Pl. Nouv. d'Amér. p. 9, t. 7; *Dalea dorycnoides,* DC.; *Dalea decora,* Schauer.

TEXAS.—NORTH MEXICO, San Luis Potosi (*Moricand*; *Parry & Palmer*, 151, 148, and 1048 in part); SOUTH MEXICO, Oaxaca (*Aschenborn*), without locality (*Bates*). Hb. Kew.

In this instance the oldest name has not been retained, because it was applied to a very young state, and, as well as the description, is inapplicable to the fully developed plant. This is one of the showiest of the genus, and remarkable in having all the petals free nearly or quite to the base.

66. **Dalea pyramidalis,** Schl. in Linnæa, xii. p. 292.

MEXICO (*Hegewisch*).

67. **Dalea ramosissima,** Benth. Bot. Voy. Sulph. p. 11, t. 10.

LOWER CALIFORNIA.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 154). Hb. Kew.

68. **Dalea reclinata,** Willd. Sp. Pl. iii. p. 1340.

Psoralea reclinata, Cav. Ic. t. 87.

MEXICO.

69. **Dalea schaffneri,** Hemsley, Diag. Pl. Nov. pars 1, p. 7.

Suffrutescens, ramosa, ramis gracilibus glandulosis, foliolis usque 20-jugis parvis oblongis ellipticisve primum villosis dein glabris subtus margineque nigro punctatis, floribus parvis laxe spicatis, spicis angustis, calyce breviter 5-dentato glandulis magnis pellucidis succineis consperso, carinæ petalis apicem versus uniglandulosis.

Suffrutex nanus, glabrescens, glandulosus, ramosus, ramis tenuibus. *Folia* petiolata, 1–2-pollicaria, primum villosa, dein glabra, rhachi gracili; foliola 11–41, brevissime petiolulata, oblonga vel elliptica, 2–4 lineas longa, obtusa, subtus conspicue nigro punctata; stipulæ subulatæ, stipellæque minutæ, persistentes. *Flores* infra 3 lineas longi, rosei vel purpurei, spicati, bracteati; spicæ laxæ, angustæ, elongatæ, bracteis alabastrum superantibus; calyx prominenter 10-costatus, inter costas pellucidus, glandulis magnis succineis conspersus, breviter 5-dentatus, 1–1½ lineas longus, dentibus obtusis, margine hirsutus; vexillum liberum, graciliter unguiculatum, limbo orbiculari-cordato; alæ oblongæ, basi auriculatæ; carinæ petala late elliptica, fere libera, versus apicem marginis inferioris uniglandulosa, et cum alis tubo stamineo adnata; ovarium glandulosum, glabrum, biovulatum.

South Mexico, rare near Chapultepec, and only seen twice (*Schaffner*). Hb. Kew.

Allied to the Californian *D. divaricata*. The glands on the petals of the keel are conspicuous.

70. **Dalea schottii,** Torr. Bot. U.S. Mex. Bound. Surv. p. 53; Watson, Bot. Calif. i. p. 143.

California; Colorado.—North Mexico, Sonora Alta (*Coulter*, 559). Hb. Kew.

71. **Dalea scoparia,** A. Gray, Pl. Fendl. p. 32.

New Mexico.—North Mexico, sandy hills near Elcearío (*Bigelow*), Laguna de los Patos, Chihuahua (*Thurber*). Hb. Kew.

72. **Dalea sericea,** Lag. Nov. Gen. et Sp. p. 23.

South Mexico, valley of Mexico (*Schaffner*, 132; *Bourgeau*, 336), Escamella, near Orizaba (*Bourgeau*, 3174), woods on the Pacific coast of Oaxaca (*Galeotti*, 3161; *Aschenborn*), Orizaba (*Botteri*, 622), Real del Monte (*Coulter*, 543), Chiapas (*Ghiesbreght*, 584), without localities (*Parkinson*, *Bates*, *Hartweg*, *Tate*, *&c.*); Guatemala, Zunil (*Hartweg*), low down on the Volcan de Fuego (*Salvin & Godman*) Hb. Kew.

73. **Dalea similis,** Hemsley, Diag. Pl. Nov. pars 1, p. 7.

Herbacea, cano vel fulvo pubescens, foliis angustis, foliolis 10–20-jugis parvis confertis sessilibus oblongo-ellipticis acutiusculis glanduloso-punctatis sed glandulis tomento opertis, floribus sericeo-villosis spicatis, spicis brevibus densis, calyce ecostato glandulis punctiformibus consperso, lobis quam tubus longioribus, petalis quam calyx longioribus omnibus fere liberis.

Herba erecta, robusta, dense cano vel fulvo pubescens, ramis obscure angulatis. *Folia* sessilia, angusta, 1½–2-pollicaria, rhachi crassa; foliola 21–41, conferta, sessilia, oblongo-elliptica, 1½–2½ lin. longa, acutiuscula, glandulis nigris tomento opertis conspersa; stipulæ minutæ, subulatæ, cito deciduæ. *Flores* (albi?) 3–3½ lin. longi, spicati, fulvo sericeo-villosi; spicæ breves, densæ, pedunculatæ, bracteatæ, bracteis ovato-lanceolatis, longissime acuminatis, flores excedentibus; calyx sericeo-villosus, leviter obliquus, 5-partitus, inconspicue glanduloso-punctatus, tubo ecostato, lobis inæquilongis, lineari-subulatis, quam tubus longioribus; petala fere æqualia et calycem superantia,

longe unguiculata; vexillum orbiculari-cucullatum; alæ et carina oblongo-ellipticæ; stamina 10, filamentis basi tantum connatis; ovarium villosum, 2-ovulatum, stylo filiformi, stigmate acuto.—*Dalea flava*, Seem. Bot. Voy. 'Herald,' p. 280, nec Mart. et Gal.

North Mexico, Cerro de Pinal, north-east of Mazatlan (*Seemann*, 1533). Hb. Kew.

In habit and general appearance this closely resembles the eastern *D. flava*, with which Seemann confounded it; but in floral characters it is very different. A complete description of *D. flava* is given above.

74. **Dalea spinescens,** A. Gray, Pl. Thurb. p. 315.

North Mexico, Sonora (*Thurber*). Hb. Kew.

75. **Dalea spinosa,** A. Gray, Pl. Thurb. p. 315.

Asagræa spinosa, Baillon, Adansonia, ix. p. 233.

California; Arizona.—North-western Mexico.

Baillon makes a distinct genus of this species, based upon its simple leaves, regular position of the glands on the calyx, and six ovules. The last character seems to be the only one of importance, as there are two or three Daleas having simple leaves, and others having more or less regularly arranged glands on the calyx.

76. **Dalea thymoides,** Schl. et Ch. in Linnæa, v. p. 580.

South Mexico, in woods between the Hacienda de Tenestepec and the Hacienda de Quantotolapa (*Schiede & Deppe*), Real del Monte to Zacatecas (*Coulter*). Hb. Kew.

77. **Dalea thyrsiflora,** A. Gray, in Proc. Am. Acad. v. p. 177.

North Mexico, Monterey and San Fernando and further south from Victoria to Tula (*Berlandier*, 763, 846, 1386, 2183, and 2266); South Mexico, Tantoyuca (*Ervendberg*).

78. **Dalea triphylla,** Pav., ex Schl. in Linnæa, xii. p. 289.

Dalea trifoliolata, Moric. Pl. Nouv. d'Amér. iii. t. 3.

Dalea prostrata, Orteg.?

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 165); South Mexico, neighbourhood of Leon to the west of Guanaxuato (*Mender*), Aguas Calientes (*Hartweg*, 55), Tacubaya (*Bourgeau*, 71; *Schaffner*). Hb. Kew.

79. **Dalea tuberculata,** Lag. Nov. Gen. et Sp. p. 23, =*Dalea thymoides*, Schl. et Ch.?

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 156, 157, and 158), Zacatecas (*Hartweg*, *Coulter*); South Mexico, Real del Monte (*Coulter*), without localities (*Alaman*, *Parkinson*, *Hahn*, *and Gregg*), San Angel, valley of Mexico (*Bourgeau*, 1187; *Schaffner*, 106), Cordillera of Oaxaca, 6000 feet (*Galeotti*, 3219). Hb. Kew.

80. **Dalea uncifera,** Schl. et Ch. in Linnæa, v. p. 580.

South Mexico, near Jalacingo (*Schiede & Deppe*), without locality (*Aschenborn*, 463),

Cordillera of Oaxaca, 5000 feet (*Galeotti*, 3421), Zimapan (*Coulter*), Santa Fé (*Bourgeau*, 1057), Orizaba (*Botteri*, 678), without localities (*Tate*; *Bates*; *Jurgensen*, 345). Hb. Kew.

81. **Dalea velutipes,** Benth. MSS. in hb. Kew.
South Mexico, Zimapan (*Coulter*), Oaxaca (*Andrieux*, 447). Hb. Kew.

82. **Dalea verbenacea,** Schl. in Linnæa, v. p. 579.
Dalea tomentosa, Willd.
Dalea psoraleoides, Moric.
North Mexico, Sierra Madre (*Seemann*, 2193); South Mexico, pine-woods, Oaxaca, 6500 feet (*Galeotti*, 3159), Vera Cruz (*Galeotti*, 3268; *Linden*, 705), Jalisco (*Lay & Collie*), Hacienda de la Laguna (*Schiede & Deppe*), without localities (*Bates, Alaman, &c.*); Guatemala, in thickets (*Bernoulli*, 184). Hb. Kew.
There may be two species confused here.

83. **Dalea versicolor,** Zucc. in Flora, 1832, ii. Beibl. p. 69.
Mexico (*Karwinski*).

84. **Dalea virgata,** Lag. Gen. et Sp. p. 23; DC. Prodr. ii. p. 246.
Mexico.

85. **Dalea wislizeni,** A. Gray, Pl. Fendl. p. 32.
New Mexico.—North Mexico, Cosiquiriachi, Sierra Madre (*Wislizenus*), Santa Cruz, Sonora (*Thurber*), neighbourhood of Durango (*Seemann*). Hb. Kew.

86. **Dalea wrightii,** A. Gray, Pl. Wright. i. p. 49.
New Mexico; Texas.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 164). Hb. Kew.

87. **Dalea zimapanica,** Schauer in Linnæa, xx. p. 746.
South Mexico, environs of Zimapan (*Aschenborn*, 460). Hb. Kew.

88. **Dalea zuccarinii,** Walp. Rep. i. p. 654.
Dalea trifoliata, Zucc. Flora, 1832, ii. Beibl. p. 69.
South Mexico (*Karwinski*).

Some of the following undetermined species in Kew herbarium are most likely undescribed; but the majority may belong to described species of which we have not seen the types.

89. **Dalea,** sp. (aff. *polyphyllæ*, Mart. et Gal.).
South Mexico, province of Oaxaca (*Ghiesbreght*, 270). Hb. Kew.

90. **Dalea,** sp.
South Mexico (*H. Christy*, 20). Hb. Kew.

91. **Dalea,** sp.
South Mexico, region of Orizaba (*Bourgeau*, 2914; *Müller*, 1566), Chiapas (*Ghiesbreght*, 582). Hb. Kew.

92. **Dalea,** sp.
North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 147, 152). Hb. Kew.

93. **Dalea,** sp.
North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 162). Hb. Kew.

94. **Dalea,** sp. (aff. *D. citriodora*).
South Mexico, Orizaba and Mexico (*Bilimek*, 118, 120). Hb. Kew.

95. **Dalea,** sp.
South Mexico, Chapultepec (*Bilimek*, 124). Hb. Kew.

96. **Dalea,** sp. (*D. nigræ* aff., sed distincta).
North Mexico, Cerro de Pinal (*Seemann*, 1527). Hb. Kew.

97. **Dalea,** sp. (*D. nigræ* aff., sed distincta).
Costa Rica, Pacaca (*Œrsted*, 1). Hb. Kew.

98. **Dalea,** sp.
North Mexico, Monterey (*Potts*, 1). Hb. Kew.

99. **Dalea,** sp. (*D. tuberculata*, Seem. non Lag.).
North Mexico, Sierra Madre (*Seemann*, 2188). Hb. Kew.

100. **Dalea,** sp.
South Mexico, around Oaxaca (*Andrieux*, 447). Hb. Kew.

101. **Dalea,** sp.
North Mexico, Sierra Madre (*Seemann*). Hb. Kew.

102. **Dalea,** sp.
North Mexico, in mountains near San Carlos (*Berlandier*, 2372). Hb. Kew.

pp = type # of D. Berlandieri 9.v.

103. **Dalea,** sp.
North Mexico, San Luis Potosi to Tampico (*Palmer*, 1048). Hb. Kew.

11. PETALOSTEMON.

Petalostemon, Michx. Fl. Bor.-Am. ii. p. 48; Benth. et Hook. Gen. Plant. i. p. 493.

A North-American genus of herbaceous plants, consisting of about fifteen species, inhabiting the Southern and South-western States and the extreme north of Mexico.

1. **Petalostemon exile,** A. Gray, Pl. Wright. ii. p. 41.

New Mexico.—North Mexico, Santa Cruz, Sonora (*Thurber*).

2. **Petalostemon candidum,** Michx. Fl. Bor.-Am. ii. p. 49, t. 37. fig. 1.

New Mexico.—North Mexico, Rio de Santa Cruz and Prodrero, Sonora (*Schott*).

12. INDIGOFERA.

Indigofera, Linn. Gen. Plant. n. 889; Benth. et Hook. Gen. Plant. i. p. 494.

A vast genus of herbaceous and shrubby plants, comprising about 250 species, generally dispersed in tropical and subtropical regions, and especially numerous in Tropical and South Africa. Upwards of 100 species have already been collected in Tropical Africa.

1. **Indigofera acutifolia,** Schl. in Linnæa, xii. p. 282.

South Mexico, Aguas Calientes, near Grande (*Ehrenberg*).

2. **Indigofera anil,** Linn. Mant. p. 292.

South Mexico, San Blas to Tepic (*Coulter*), Regla (*Ehrenberg*), Hacienda de la Laguna (*Schiede*), valley of Cordova (*Bourgeau*, 1625); Nicaragua, neighbourhood of Granada (*Levy*), Graytown (*Tate*, 341); Costa Rica, Aguacate (*Œrsted*); Panama, Chagres (*Fendler*, 101; *Seemann*).—Widely dispersed in Tropical America, where it is believed to be indigenous, and naturalized in many parts of Tropical Africa and Asia.

Var. β. **polyphylla,** DC. Prodr. ii. p. 225; Calques des Dess. Fl. Mex. 264. "An sp. propria?"

South Mexico, Zacuapan and Mirador (*Galeotti*, 3274 and 3334).

3. **Indigofera coronilloides,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 45.

South Mexico, Misteca Alta, Oaxaca, 7000 feet (*Galeotti*, 3234), Cuicatlan, 2000 feet (*Galeotti*, 3242). Hb. Paris.

4. **Indigofera costa-ricensis,** Benth. in Vidensk. Meddel. 1853, p. 5.

Costa Rica, San José (*Œrsted*).

5. **Indigofera densiflora,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 44.

South Mexico, mountains of Oaxaca, at 8500 feet (*Galeotti*, 3201), Michoacan (*Galeotti*, 3389), and woods near the Pacific (*Galeotti*, 3172), Real del Monte (*Coulter*). Hb. Kew.

6. **Indigofera domingensis,** Spreng., DC. Prodr. ii. p. 227.

Indigofera microcarpa, Desv.

South Mexico, forests on the banks of streams on the western Cordillera of Oaxaca, from 5000 to 6000 feet (*Galeotti*, 3202); Central America, west side (*Œrsted*).—In Tropical America to South Brazil. Hb. Kew.

7. **Indigofera excelsa,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 45.

South Mexico, Orizaba (*Botteri*, 690; *Bourgeau*, 2572), woods at 7000 to 8500 feet in the Cordillera of Oaxaca, and forests of Jesus del Monte near Morelia in Michoacan (*Galeotti*, 3209), Vera Cruz to Orizaba (*Müller*, 1590), valley of Cordova (*Bourgeau*); Guatemala, Dueñas, hill-side, 5000 feet, Volcan de Fuego (*Salvin*). Hb. Kew.

8. **Indigofera? hippocrepoides,** Schl. in Linnæa, xii. p. 283.

South Mexico, Atotonilco el Chico (*Ehrenberg*), eastern Cordillera of Oaxaca, at Yavesia and Castrasana, 6500 to 7000 feet (*Galeotti*, 3149).

9. **Indigofera leptosepala,** Nutt. in Torr. et Gr. Fl. N. Amer. i. p. 298.

Arkansas and Texas.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 138, 139), Monterey (*Eaton & Edwards*, 19), Chihuahua (*Potts*); South Mexico, Orizaba (*Botteri*, 694), Sierra San Pedro (*Jurgensen*, 694), Oaxaca (*Ghiesbreght*, 184).—Southward to Peru. Hb. Kew.

10. **Indigofera lespedezioides,** H. B. K. Nov. Gen. et Sp. vi. p. 457.

North Mexico, Chihuahua (*Potts*); South Mexico, Volcan de Jorullo (*Humboldt & Bonpland*); Central America, west side (*Œrsted*).—Nearly all over Tropical South America; also in Cuba, Hb. Kew.

11. **Indigofera? lotoides,** Schl. in Linnæa, xii. p. 282.

South Mexico, Mineral del Monte at the foot of the Eagle Rock (*Ehrenberg*).

12. **Indigofera mexicana,** Benth. Pl. Hartw. p. 286.

South Mexico, Leon (*Hartweg*, 1596), Zimapan (*Coulter*, 625), Valladolid, Michoacan (*Galeotti*, 3386), around Oaxaca (*Andrieux*, 438), without locality (*Jurgensen*, 484, 694). Hb. Kew.

13. **Indigofera mucronata,** Spreng. ex DC. Prodr. ii. p. 227.

Indigofera torulosa, Hook. et Arn.

South Mexico, Vera Cruz to Orizaba (*Müller*; *Botteri*, 697), without locality (*Beechey*), valley of Cordova (*Bourgeau*, 1695); Guatemala, in thickets, Costa Grande, Ixtacapa (*Bernoulli*, 556), Volcan de Fuego (*Salvin*); Nicaragua, Realejo (*Sinclair*), Granada (*Œrsted*); Costa Rica, Aguacate (*Œrsted*, 59), Angostura (*Polakowsky*); Panama, Empire railway-station (*S. Hayes*, 320), near the city of Panama (*S. Hayes*, 534).—Jamaica; Venezuela. Hb. Kew.

14. **Indigofera ornithopodioides,** Schl. et Ch. in Linnæa, v. p. 577.

South Mexico, in grassy places near Vera Cruz (*Schiede & Deppe*).

15. **Indigofera pascuorum,** Benth. in Ann. Nat. Hist. iii. p. 431.

Nicaragua, Granada (*Œrsted*); Panama, in meadows near the city of Panama (*Seemann*, 208).—And in Guiana. Hb. Kew.

16. **Indigofera sphærocarpa,** A. Gray, Pl. Wright. ii. p. 37.
North Mexico, Santa Cruz, Sonora (*Wright*, 968). Hb. Kew.

17. **Indigofera subulata,** Vahl in Poir. Suppl. iii. p. 150.
South Mexico, near Tantoyuca (*Ervendberg*, 20 and 27).—Jamaica; Venezuela; and in Tropical Africa and Asia. Hb. Kew.

18. **Indigofera thibaudiana,** DC. Prodr. ii. p. 225.
South Mexico, in thickets near Jalapa (*Schiede*), ? oak-forests of Juquila, Oaxaca, at 6000 feet (*Galeotti*, 3172). The native country unknown to De Candolle.

19. **Indigofera,** sp.
Costa Rica, San José (*Œrsted*). Hb. Kew.

20. **Indigofera,** sp.
South Mexico, Barranca near Cuernavaca (*Bourgeau*, 1192). Hb. Kew.

21. **Indigofera,** sp.
South Mexico, valley of Cordova (*Bourgeau*, 2038). Hb. Kew.

13. HARPALYCE.

Harpalyce, Moç. et Sessé in DC. Mém. Leg. p. 496; Benth. et Hook. Gen. Plant. i. p. 494.

About six shrubby species, all American, extending from Mexico and Cuba to Brazil.

1. **Harpalyce arborescens,** A. Gray, in Proc. Am. Acad. Sc. v. p. 178.
South Mexico, Wartenberg, near Tantoyuca, Huasteca (*Ervendberg*, 18), Zimapan (*Coulter*, 556). Hb. Kew.

2. **Harpalyce formosa,** Moç. et Sessé ex DC. Prodr. ii. p. 523; Calques des Dess. Fl. Mex. 249 et xxv. B.
South Mexico (*Moçino & Sessé*).
There is a copy of Moçino and Sessé's coloured figure of this species in Hb. Kew.

14. BRONGNIARTIA.

Brongniartia, H. B. K. Nov. Gen. et Sp. vi. p. 465; Benth. et Hook. Gen. Plant. i. p. 495.

About fifteen shrubby species, natives of Mexico and Central America; and two doubtful South-American plants are referred hither in Kew Herbarium.

1. **Brongniartia benthamiana,** n. sp.
Fruticosa, novellis dense fusco-sericeo-tomentosis, foliis petiolatis ampliusculis imparipinnatis, foliolis 13–19 petiolulatis ovato-oblongis apiculatis, pedunculis axillaribus solitariis vel 2–4

aggregatis, bracteis oblongis alabastra involventibus, floribus pollicaribus, petalis longiuscule unguiculatis, ovario longiuscule stipitato dorso superne leviter piloso 6-ovulato.

Frutex vel *suffrutex*, novellis dense fusco-sericeo-tomentosis; ramis crassiusculis, demum glaberrimis flavescentibus nitidis. *Folia* breviter petiolata, imparipinnata, usque semipedalia; foliola 13–19, longiuscule petiolulata, crebriuscula, ovato-oblonga, 1–1½ poll. longa, infra medium 6–8 lin. lata, basi rotundata, apice obtusissima et apiculata, utrinque demum subglabrescentia, venis minute reticulatis; stipulæ oblique oblongæ, acutæ, semipollicares persistentes. *Flores* pollicares et ultra, graciliter pedunculati, axillares, solitarii vel 2–4 aggregati; pedunculi 1½–2-pollicares; bracteæ oblongæ, acutæ, circiter 10 lin. longæ et 3 lin. latæ, alabastra involventes, per anthesin deciduæ; calyx atro-fusco-sericeus, lobis angustis acuminatis, antico cum tubo usque 10 lin. longo; petala longiuscule (3–4 lin.) unguiculata, vexillo orbiculari; ovarium stipitatum (stipite circiter 3 lin. longo), dorso superne leviter pilosum, sæpe 6-ovulatum, stylo elongato, arcuato, gracili. *Legumen* ignotum.—*Peraltea lupinoides*, H. B. K.?, Benth. Pl. Hartw. p. 10.

South Mexico, Leon (*Hartweg*). Hb. Kew.

This differs from *Peraltea lupinoides*, H. B. K., *Brongniartia thermoides*, Spr., in its apiculate leaves, longer flowers, clawed petals, and distinctly stalked ovary, &c.

2. **Brongniartia foliolosa,** Benth. in Hemsley, Diag. Pl. Nov. pars 1, p. 7.

Frutescens, glabrescens, foliolis cito glaberrimis usque ad 20-jugis brevissime petiolulatis coriaceis parvis oblongis mucronulatis, stipulis amplis persistentibus, floribus axillaribus solitariis geminisve, bracteolis 2 amplis ovato-ellipticis alabastra amplectentibus, legumine stipitato.

Frutex, ut videtur, novellis parce hirsutis, ramulis deciduis. *Folia* crebra, angusta, ad 3-pollicaria, breviter petiolata; foliola 35–45, contigua, breviter petiolulata, coriacea, cito glaberrima, integerrima, ovato-oblonga, ad 3 lin. longa, mucronata, utrinque rotundata, infra costa elevata, venis reticulatis, petiolo 3–4 lin. longo; stipulæ oblique ovatæ, acute acuminatæ, ad 3 lin. longæ, persistentes. *Flores* 8–9 lin. longi, graciliter pedicellati, axillares, solitarii vel gemini, basi bibracteolati, pedicellis pollicaribus; bracteolæ ovato-ellipticæ, alabastra amplectentes, deciduæ; calyx persistens, glaber, lobis angustis, acutis; vexillum orbiculatum; alæ oblongæ; carina cymbiformis; ovarium stipitatum, ad 6-ovulatum. *Legumen* stipitatum, valde compressum, oblongum, anguste alatum, ad sesquipollicare, stylo indurato terminale.

South Mexico, Zimapan (*Coulter*, 555). Hb. Kew.

3. **Brongniartia galegoides,** Presl, Symb. Bot. ii. p. 21, t. 67.

Foliolis late ellipticis sesquipollicaribus, stipulis semicordatis rotundatis usque 2½-pollicaribus.

Mexico, without locality (*Parkinson*). Hb. Kew.

Although the stipules of Parkinson's plant are enormously larger than those figured and described by Presl, we think it must be the same species, as it agrees in all other essential particulars. Presl's figure is not well drawn; and he does not give a more precise habitat than "Tropical America."

4. **Brongniartia glabrata,** Hook. et Arn. Bot. Beech. Voy. p. 238.

Mexico, without locality (*Beechey*). Hb. Kew.

5. **Brongniartia gracilis,** n. sp.

Fruticosa, ramosa, fulvo-sericeo-tomentosa, ramis graciliusculis, foliis elongatis, foliolis 17–25 mem-

branaceis distantibus oblongis apice longiuscule cristatis, rhachi gracili, pedunculis gracilibus, bracteis ovato-oblongis alabastra involventibus subpersistentibus, floribus mediocribus, calyce hirsuto, ovario glabro breviter stipitato circiter 6-ovulato.

Frutex ramosus, novellis densiuscule fulvo-sericeo-villosis, ramis graciliusculis glabrescentibus tenuiter striatis. *Folia* breviter petiolata, 6–9-pollicaria, imparipinnata; foliola 17–25, breviter petiolulata, membranacea, distantia, oblonga, 9–12 lin. longa, longiuscule aristata, rhachi gracili; stipulæ deciduæ non visæ. *Flores* mediocres (circiter 9 lin. longi), axillares, solitarii vel gemini, pedunculis gracilibus sesquipollicaribus; bracteæ ovato-oblongæ, acutæ, 4–5 lin. longæ, 4–5 lin. latæ, alabastra involventes subpersistentes; calycis hirsuti lobi acuti; ovarium glabrum, breviter stipitatum, circiter 6-ovulatum, stylo elongato arcuato. *Legumen* ignotum.

South Mexico, without locality (*Sallé*). Hb. Kew.

B. oxyphylla is the nearest ally of *B. gracilis*; but that is a much stouter plant, larger in all its parts, and clothed with an exceedingly dense rusty tomentum. The bracts, too, of our plant are much narrower, the calyx-lobes relatively shorter, &c.

6. **Brongniartia intermedia,** Moric. Pl. Nouv. d'Am. p. 14, t. 10.

South Mexico, Santa Fé, valley of Mexico (*Bourgeau*, 84). Hb. Kew.

This should perhaps include our *B. stipitata*.

7. **Brongniartia magnibracteata,** Schl. in Linnæa, xii. p. 338.

South Mexico, barranca near San Bartolo (*Ehrenberg*), ?Sierra de San Pedro Nolasco &c. (*Jurgensen*, 829). Hb. Kew.

8. **Brongniartia mollis,** H. B. K. Nov. Gen. et Sp. vi. p. 467, t. 587.

South Mexico, hilly places, Quebrada de Sopilote, between Zumpango and Tasco, at 3108 feet (*Humboldt & Bonpland*), ?Cerro de Guadalupe (*Bourgeau*, 83, in part). Hb. Kew.

9. **Brongniartia oxyphylla,** Hemsley.

Peraltea oxyphylla, DC. Mém. Leg. xiii. p. 463; Prodr. ii. p. 475.

South Mexico, plain of Oaxaca, at 5000 feet (*Galeotti*, 3233), without locality (*Jurgensen*, 6), between Acatlan and Chila (*Andrieux*, 445). Hb. Kew.

10. **Brongniartia oligospermoides,** Baill. Adans. ix. p. 240.

Mexico, Xochialco (*Hahn*). Hb. Paris.

11. **Brongniartia parryi,** n. sp.

Arborea vel fruticosa, novellis dense argenteo-velutinis, foliis amplis imparipinnatis, foliolis sæpissime 7 subsessilibus crassis ovato-oblongis obtusis apiculatis venis subtus prominenter elevato-reticulatis, pedunculis axillaribus solitariis geminis vel ternis, floribus . . . legumine longiuscule stipitato coriaceo sæpe 6-spermo.

Arbor vel *frutex*, novellis dense argenteo-velutinis; ramis crassiusculis, flexuosis, internodiis brevibus. *Folia* breviter petiolata, imparipinnata, 2–6-pollicaria; foliola sæpissime 7, subsessilia, crassa, mollia, ovato-oblonga, in specimine uno 9–12 lin. longa, in specimine altero 2–3 poll. longa, maxima usque sesquipoll. lata, basi rotundata vel subcordata, apice rotundata et mucro-

nulata, venis subtus prominenter elevato-reticulatis; stipulæ deciduæ a nobis non visæ. *Flores* ignoti; pedunculi axillares, solitarii, gemini vel terni, 6–15 lin. longi. *Legumen* valde coriaceum, longiuscule stipitatum, 2–3-pollicare, apice mucronatum, primum glaucum, opacum, dein nitidum, angustissime alatum; semina sæpe 6, compressa, nitida, circiter 5 lin. diametro.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 205). Hb. Kew.

A very distinct species, having its young parts covered with a dense silvery velvety tomentum, and very thick leaves, prominently reticulated below. In one of the two specimens before us the leaflets scarcely exceed an inch in length, whilst they are from two to three and a half inches long in the other.

12. **Brongniartia podalyrioides,** H. B. K. Nov. Gen. et Sp. vi. p. 468, t. 588.

South Mexico, between Tasco and Cuernavaca, near La Puerta de Istla, at 3000 feet (*Humboldt & Bonpland*).

13. **Brongniartia retusa,** Benth. in Hemsley, Diag. Pl. Nov. pars 1, p. 8.

Fruticosa, foliolis 4–5-jugis exstipulatis amplis petiolulatis orbiculari-ellipticis retusis subtus puberulis et glanduloso-punctatis, glandulis luteis, legumine sessili coriaceo compresso 2–2½-pollicari.

Frutex vel *arbor*, parva, ramis curvatis. *Folia* petiolata, exstipulata, 4–5-pollicaria; foliola 9–11, membranacea, longiuscule petiolulata, orbiculari-elliptica, 9–15 lin. diametro, basi rotundata vel subcuneata, apice retusa, supra glabra, subtus puberula et glandulis minutis luteis conspersa, rhachi gracili, petiolo 6–12 lin. longo. *Flores* . . . *Legumen* sessile, coriaceum, oblongum, compressum, exalatum, 2–2½-pollicare ad 6-spermum.

South Mexico, Tula (*Berlandier*, 759, 2179). Hb. Kew.

The broad leaflets, thickly studded beneath with small yellow glands, distinguish this species, which may prove to be a *Harpalyce* when flowers come to light.

14. **Brongniartia sericea,** Schl. in Linnæa, xii. p. 337.

South Mexico, volcano of Ayotla, near Mexico (*Galeotti*, 3358), Cerro de Guadalupe, Peñon Grande, Regla, and Barranca near San Bartolo (*Ehrenberg*), near Mexico (*Bourgeau*, 83). Hb. Kew.

15. **Brongniartia stipitata,** Hemsley, Diag. Pl. Nov. pars 1, p. 8.

Fruticosa, ramulis teretibus gracilibus furfuraceo-strigillosis, foliis petiolatis stipulatis angustis, foliolis 8–12-jugis parvis oblongis vix coriaceis petiolulatis, floribus solitariis axillaribus pedicellatis bibracteolatis, bracteolis amplis glabris alabastra amplectentibus, legumine longe stipitato.

Frutex novellis strigilloso-furfuraceis, ramulis teretibus dense foliosis. *Folia* petiolata, 3–4-pollicaria; foliola 17–25, petiolulata, submembranacea, oblonga, 6–9 lineas longa, utrinque rotundata, mucronulata, subtus secus costam elevatam hispidula, cæteris cito glabrescentia, rhachi gracili, dense strigilloso, petiolulis ad 1 lin. longis; stipulæ ovato-lanceolatæ, acutæ, 3–4 lineas longæ. *Flores* 8–9 lin. longi, pedicellati, axillares, solitarii, basi bibracteolati, pedicellis 6–9 lin. longis; bracteolæ glabræ, ellipticæ, alabastra amplectentes; calyx persistens, glaber, lobis angustis acutis; vexillum oblongum. *Legumen* longe stipitatum (4–5 lin.), glabrum, oblique oblongum,

sine stipite sesquipollicare, compressum, anguste alatum, ad 4-spermum, stylo elongato indurato persistente terminatum.

South Mexico, without exact localities (*Halsted & Sumichrast*). Hb. Kew.

Since the publication of the diagnosis of this species, we have had occasion to compare a number of specimens of various species of the genus; and there is no doubt that this is very near, if not identical with, *B. intermedia*, Moric.; but the pod of Moricand's plant is represented as double the length of those of our *B. stipitata*. Our plant has also much the aspect of *B. foliolosa*, from which it differs in its more abundant and persistent tomentum, softer leaves, shorter pedicels, longer stipes of the pod, &c.

16. **Brongniartia thermoides,** Spr. ex Steud. Nomen. Bot. i. p. 230.

Peraltea lupinioides, H. B. K. Nov. Gen. et Sp. vi. p. 471, t. 589.

South Mexico, between Chilpancingo and Zumpango, 3200 feet (*Humboldt & Bonpland*). Hb. Kew.

17. **Brongniartia vicioides,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 49.

South Mexico, forests and near streams, Misteca Alta, at 7000 feet, and Serro de San Felipe, at 7000 to 8000 feet (*Galeotti*, 3237).

18. **Brongniartia,** sp.

South Mexico, around Oaxaca (*Andrieux*, 444). Hb. Kew.

15. PETERIA.

Peteria, A. Gray, Pl. Wright. i. p. 50; Benth. et Hook. Gen. Plant. i. p. 495.

One dwarf shrubby species.

1. **Peteria scoparia,** A. Gray, Pl. Wright. i. p. 50.

Texas, New Mexico.—North Mexico, near Lake Encinillas, north of Chihuahua (*Wislizenus*), Mimbres (*Wright*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 172). Hb. Kew.

16. BARBIERIA.

Barbieria, DC. Mém. Leg. p. 241; Benth. et Hook. Gen. Plant. i. p. 495.

One shrubby species.

1. **Barbieria polyphylla,** DC. Mém. Leg. p. 249, t. 39.

South Mexico, without locality (*Jurgensen*, 780, 957).—Cuba and Tropical South America. Hb. Kew.

17. TEPHROSIA.

Tephrosia, Pers. Syn. ii. p. 328; Benth. et Hook. Gen. Plant. i. p. 496.

Upwards of 100 species of herbs and shrubs, generally dispersed in warm countries,

and especially numerous in Tropical and South Africa and Extratropical Australia, a few growing in North America.

1. **Tephrosia cinerea,** Pers. Ench. ii. p. 328; Jacq. Ic. Rar. t. 575.

Tephrosia decumbens, Benth.?

South Mexico, dunes of Vera Cruz (*Galeotti*, 3335), Yucatan (*Linden*, 1333), Guanaxuato (*Œrsted*); Nicaragua, Gulf of Fonseca (*Sinclair*), Granada (*Œrsted*; *Levy*, 94).—Widely spread in Subtropical and Tropical South America to Uruguay. Hb. Kew.

2. **Tephrosia chrysophylla,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 49.

South Mexico, savannas at Malpique de Zacuapan and Mirador, at 3000 feet (*Galeotti*, 3326). Hb. Kew.

3. **Tephrosia crassifolia,** Benth. Bot. Voy. Sulph. p. 80.

North Mexico, Sierra Madre (*Seemann*, 2183); South Mexico, Acapulco (*Hinds*), woods at 3000 feet, Vera Cruz (*Galeotti*, 3286). Hb. Kew.

4. **Tephrosia decumbens,** Benth. in Vidensk. Meddel. 1853, p. 7.

Tephrosia oroboides, Benth. Bot. Voy. Sulph., nec H. B. K.

Nicaragua, Fonseca (*Sinclair*), Granada (*Œrsted*). Hb. Kew.

Probably the same as *T. cinerea.*

5. **Tephrosia lanata,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 48.

South Mexico, savannas of the Malpique de Zacuapan, at 3000 feet (*Galeotti*, 3286).

6. **Tephrosia leiocarpa,** A. Gray, Pl. Wright. ii. p. 36.

North Mexico, on the Sonoito (*Wright*).

7. **Tephrosia leptostachya,** DC. Prodr. ii. p. 251.

New Mexico.—North Mexico, Sonora Alta (*Coulter*), Cerro de Pinal (*Seemann*, 1525); South Mexico, Mirador (*Linden*, 709); Nicaragua, Segovia (*Œrsted*).—Also in Eastern South America southward to South Brazil, and in the West Indies. Hb. Kew.

8. **Tephrosia leucantha,** H. B. K. Nov. Gen. et Sp. vi. p. 460, t. 577.

Arizona and New Mexico.—North Mexico, Santa Cruz and Mabibi, Sonora (*Thurber*), Sierra Verde (*Schott*), Cerro de Pinal (*Seemann*, 1532); South Mexico, near Guanaxuato, 6400 feet (*Humboldt & Bonpland*). Hb. Kew.

9. **Tephrosia lindheimeri,** A. Gray in Bost. Journ. Nat. Hist. vi. p. 172.

Texas; New Mexico.—North Mexico, valley of the Rio Grande.

10. **Tephrosia littoralis,** Pers. Ench. ii. p. 329.

South Mexico, dunes on the coast of Vera Cruz (*Galeotti*, 3335).

This number is under *T. cinerea* in Hb. Kew.

11. **Tephrosia madrensis,** Seem. Bot. Voy. 'Herald,' p. 280, t. 61.
North Mexico, Sierra Madre (*Seemann*, 2186). Hb. Kew.

12. **Tephrosia nicaraguensis,** Œrst. in Vidensk. Meddel. 1853, p. 6.
Nicaragua, between Granada and Maxaga (*Œrsted*). Hb. Kew.

13. **Tephrosia nitens,** Benth. in Seem. Bot. Voy. 'Herald,' p. 107, t. 19.
South Mexico, in sandy places, Vera Cruz (*Schiede & Deppe*); Panama, isle of Taboga (*Seemann*, 1036).—Southward through Colombia to Peru and Brazil. Hb. Kew.

14. **Tephrosia? oroboides,** H. B. K. Nov. Gen. et Sp. vi. p. 462, t. 579.
South Mexico, near Guanaxuato, 6400 feet (*Humboldt & Bonpland*), without locality (*Schiede & Deppe*).

15. **Tephrosia piscatoria,** Pers. Ench. ii. p. 329.
Nicaragua, Realejo (*Hinds*), island near Realejo (*Œrsted*). Hb. Kew.

16. **Tephrosia schiedeana,** Schl. in Linnæa, xii. p. 299.
South Mexico, precipices, Barranca de Tioselo, near Hacienda de la Laguna (*Schiede*), near Tantoyuca (*Ehrenberg*).

17. **Tephrosia tenella,** A. Gray, Pl. Lindh. ii. p. 172.
North Mexico, Santa Cruz, Sonora (*Thurber*), Sierra de la Union (*Schott*), San Pedro (*Wright*).

18. **Tephrosia toxicaria,** Pers. Ench. ii. p. 328; Plum. ed. Burm. t. 135.
South Mexico, region of Orizaba (*Bourgeau*, 2797 bis), Acapulco (*Beechey*), Tolotepeque, Oaxaca, at 7000 feet (*Galeotti*, 3157), without locality (*Karwinski* and others); Costa Rica, Aguacate (*Œrsted*); Panama (*Seemann*).—Very widely dispersed in the West Indies and Tropical South America. Hb. Kew.

Tephrosia schiedeana, Schl., is referred to this species in Hb. Kew.

19. **Tephrosia venosa,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 47.
South Mexico, cultivated fields near Oaxaca and Tlacolula, at 5000 feet (*Galeotti*, 3206).

20. **Tephrosia vicioides,** Schl. in Linnæa, xii. p. 297.
South Mexico, declivities of grassy valleys, Hacienda de la Laguna (*Schiede*).

21. **Tephrosia virginiana,** Pers. Ench. ii. p. 329.
Eastern States of North America.—North Mexico, Sierra Madre (*Seemann*, 2191). Hb. Kew.

22. **Tephrosia,** sp. (*T. nitens*, Seem.?).
North Mexico, Sierra Madre (*Seemann*, 2192). Hb. Kew.

23. **Tephrosia,** sp. (affinis *T. leucanthæ*).
SOUTH MEXICO, Acapulco (*Hinds*). Hb. Kew.

24. **Tephrosia,** sp.
NICARAGUA, Guanacaste (*Œrsted*). Hb. Kew.

18. ROBINIA.

Robinia, Linn. Gen. Plant. n. 879; Benth. et Hook. Gen. Plant. i. p. 499.

A genus of about six fully known species and several obscure ones. They are shrubs and trees, and endemic in Mexico and North America.

1. **Robinia acuminata,** Schl. in Linnæa, xii. p. 306.
SOUTH MEXICO, Mapilque (*Schiede*).

2. **Robinia ehrenbergii,** Schl. in Linnæa, xii. p. 303.
SOUTH MEXICO, Aguas Calientes, near Granada (*Ehrenberg*).

3. **Robinia? glabra,** Mill. Dict. n. 5.
SOUTH MEXICO, Campeche.

4. **Robinia? latifolia,** Mill. Dict. n. 9 (nec Poir.).
SOUTH MEXICO, Campeche.

5. **Robinia? maculata,** H. B. K. Nov. Gen. et Sp. vi. p. 393.
SOUTH MEXICO, near Campeche (*Humboldt & Bonpland*).

6. **Robinia melanocarpa,** Schl. in Linnæa, xii. p. 305.
SOUTH MEXICO, in woods, Papantla (*Schiede*).

7. **Robinia? pyramidata,** Mill. Dict. n. 7.
SOUTH MEXICO, Campeche.

8. **Robinia schiedeana,** Schl. in Linnæa, xii. p. 306.
SOUTH MEXICO, between Vera Cruz and Santa Fé (*Schiede*).

9. **Robinia variegata,** Schl. in Linnæa, xii. p. 301.
SOUTH MEXICO, Actopan (*Schiede*).

10. **Robinia,** sp.
SOUTH MEXICO (*Jurgensen,* 10). Hb. Kew.

11. **Robinia,** sp.
SOUTH MEXICO (*Bates*). Hb. Kew.

19. GLIRICIDA.

Gliricida, H. B. K. Nov. Gen. et Sp. vi. p. 393; Benth. et Hook. Gen. Plant. i. p. 499.

Three or four shrubby and arboreous species, endemic in Tropical America.

1. **Gliricida maculata,** H. B. K. Nov. Gen. et Sp. vi. p. 393.
Lonchocarpus maculatus, DC.

GUATEMALA (*Friedrichsthal*); NICARAGUA (*Œrsted*); COSTA RICA, near Pitajojia (*Œrsted*); PANAMA, common in hedges (*S. Hayes*, 104).—COLOMBIA to GUIANA. Hb. Kew.

2. **Gliricida,** sp.

COSTA RICA (*Œrsted*, 7). Hb. Kew.

20. LENNEA.

Lennea, Klotzsch in Link, Kl. et Otto Ic. Pl. ii. p. 65; Benth. et Hook. Gen. Plant. i. p. 500.

Limited to the two following shrubby or arboreous species, endemic in America.

1. **Lennea robinioides,** Kl. in Link, Kl. et Otto Pl. Rar. Hort. Berol. Ic. iv. p. 65, t. 26.

SOUTH MEXICO, Wartenberg, Huasteca (*Ervendberg*, 28). Hb. Kew.

2. **Lennea viridiflora,** Seem. Bot. Voy. 'Herald,' p. 107.

PANAMA, Santiago de Veraguas (*Seemann*, 1189). Hb. Kew.

21. OLNEYA.

Olneya, A. Gray in Mem. Amer. Acad. v. p. 328; Benth. et Hook. Gen. Plant. i. p. 500.

Only one species, which is a small tree.

1. **Olneya tesota,** A. Gray, Pl. Thurb. pp. 313, 328; Torr. in Rep. Pacif. Railr. Expl. vii. p. 10, t. 5.
Tesota, C. Müll. in Walp. Ann. iv. p. 479.

CALIFORNIA; ARIZONA; NEW MEXICO.—NORTH MEXICO, Sonora tablelands (*Thurber*, 646). Hb. Kew.

22. DIPHYSA.

Diphysa; Jacq. Stirp. Amer. p. 208; Benth. et Hook. Gen. Plant. i. p. 500.

Trees and shrubs. About six or eight species, endemic in Central America.

1. **Diphysa carthagenensis,** Jacq. Amer. p. 208, t. 180. fig. 51.

SOUTH MEXICO, Hacienda de la Laguna (*Schiede & Deppe*), ? near Tantoyuca (*Ervendberg*); PANAMA (*S. Hayes*, 483; *Seemann*, 202).—CARTHAGENA. Hb. Kew.

2. **Diphysa floribunda,** Peyr. in Linnæa, xxx. p. 78.

SOUTH MEXICO, Mirador, at 3000 feet (*Heller*, 206, 207).

3. **Diphysa humilis,** Œrst. in Vidensk. Meddel. 1853, p. 12.

NICARAGUA, Guanacaste (*Œrsted*). Hb. Kew.

4. **Diphysa robinioides,** Benth. in Vidensk. Meddel. 1853, p. 11.
NICARAGUA, Volcan de Mombacho (*Ærsted*). Hb. Kew.

5. **Diphysa sennoides,** Benth. in Vidensk. Meddel. 1853, p. 12.
SOUTH MEXICO, Mirador (*Linden*, 715), Zimapan (*Coulter*, 557), valley of Cordova (*Bourgeau*, 1799, 1857), without locality (*Jurgensen*, 449), Orizaba (*Bilimek*, 142); GUATEMALA, Dueñas (*Salvin & Godman*), without locality (*Skinner*).—VENEZUELA. Hb. Kew.

6. **Diphysa,** sp.
SOUTH MEXICO, at the foot of Monte San Felipe, near Oaxaca (*Andrieux*, 426). Hb. Kew.

7. **Diphysa,** sp.
SOUTH MEXICO, State of Puebla (*Andrieux*, 451). Hb. Kew.

8. **Diphysa,** sp.
SOUTH MEXICO (*Bates*). Hb. Kew.

23. SABINEA.

Sabinea, DC. in Ann. Sc. Nat. sér. 1, vol. iv. p. 92; Benth. et Hook. Gen. Plant. i. p. 501.

Two or three shrubby and arboreous species, inhabiting the West Indies and Mexico.

1. **Sabinea florida,** DC. Prodr. ii. p. 263.
Var. "foliolis tenuioribus," Benth. in Seem. Bot. Voy. 'Herald,' p. 107.
PANAMA, Veraguas (*Seemann*). Hb. Kew.
The typical plant is a native of DOMINICA and JAMAICA.

2. **Sabinea ?,** sp.
MEXICO? (*Ærsted*). Hb. Kew.

24. COURSETIA.

Coursetia, DC. in Ann. Sc. Nat. sér. 1, vol. iv. p. 92; Benth. et Hook. Gen. Plant. i. p. 501.

About ten shrubby and arboreous species, inhabiting America, from Brazil to South California.

1. **Coursetia arborea,** Griseb. Fl. Brit. W. Ind. p. 183.
PANAMA, Veraguas (*Seemann*).—COLOMBIA, GUIANA, and TRINIDAD. Hb. Kew.

2. **Coursetia? virgata,** DC. Prodr. ii. p. 264.
Æschynomene virgata, Cav. Ic. t. 295.
NEW SPAIN.

3. **Coursetia,** sp.
GUATEMALA (*Friedrichsthal*). Hb. Kew.

25. CRACCA.

Cracca, Benth. in Vidensk. Meddel. 1853, p. 8; Benth. et Hook. Gen. Plant. i. p. 501.

About half a dozen herbaceous (or woody?) species, natives of Tropical America, chiefly the western side.

1. **Cracca caribæa,** Benth. ex Griseb. Fl. Brit. W. Ind. p. 183.
Tephrosia mollis, H. B. K. Nov. Gen. et Sp. vi. p. 462.
NICARAGUA, gulf of Fonseca (*Sinclair*), Volcan el Viejo (*Ærsted*).—WEST INDIES; VENEZUELA; ECUADOR. Hb. Kew.

2. **Cracca edwardsii,** A. Gray, Pl. Wright. ii. p. 35.
NORTH MEXICO, near Monterey, Nuevo Leon (*Edwards*), valleys in the mountains between the San Pedro and the Sonoita, Sonora (*Wright*).

3. **Cracca glabrescens,** Benth. in Vidensk. Meddel. 1853, p. 9.
Tephrosia glabrescens, Benth.
NEW MEXICO.—NORTH MEXICO, Monterey, Nuevo Leon (*Eaton & Edwards*).—Also in ECUADOR. Hb. Kew.

4. **Cracca ochroleuca,** Benth. in Vidensk. Meddel. 1853, p. 9.
Tephrosia ochroleuca, Pers.
SOUTH MEXICO, Vera Cruz (*Galeotti*, 3340); NICARAGUA, Gulf of Fonseca (*Sinclair*); PANAMA (*Cuming*).—PERU. Hb. Kew.

5. **Cracca,** sp.
MEXICO, without either locality or number (*Coulter*). Hb. Kew.

6. **Cracca,** sp.
SOUTH MEXICO, Misteca Alta, at 7000 feet (*Galeotti*, 3234). Hb. Kew.

7. **Cracca,** sp.
SOUTH MEXICO, Zimapan (*Coulter*). Hb. Kew.

26. SESBANIA.

Sesbania, Pers. Syn. Pl. ii. p. 316; Benth. et Hook. Gen. Plant. i. p. 502.

Shrubs and herbs. About sixteen species, widely dispersed in tropical and subtropical regions. Some of them are amphigæous.

1. **Sesbania exasperata,** H. B. K. Nov. Gen. et Sp. v. p. 534.
GUATEMALA (*Friedrichsthal*).—COLOMBIA to PERU, and in JAMAICA and TRINIDAD. Hb. Kew.

2. **Sesbania longifolia,** DC. Prodr. ii. p. 265.

Æschynomene longifolia, Ortega.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 209). Hb. Kew.

3. **Sesbania macrocarpa,** Mühl. in DC. Prodr. ii. p. 266.

Florida; Louisiana; Texas.—North Mexico, Cocospera, Sonora (*Thurber*); South Mexico, without exact locality (*Jurgensen*, 510); Panama, Rio Grande railway-station (*S. Hayes*, 297), Santiago de Veraguas (*Seemann*, 1186). Hb. Kew.

4. **Sesbania picta,** Pers. Ench. ii. p. 316.

Æschynomene picta, Cav. Ic. t. 314.

New Spain.

5. **Sesbania tomentosa,** Hook. et Arn. Bot. Beech. Voy. p. 286.

South Mexico, Acapulco (*Beechey*).

6. **Sesbania,** sp.

Mexico (*hb. Lambert*). Hb. Kew.

27. ASTRAGALUS.

Astragalus, Linn. Gen. Plant. n. 892; Benth. et Hook. Gen. Plant. i. p. 506; Bunge, Generis Astragali Species Gerontogeæ (1868–69).

A vast genus of herbs and dwarf, often spiny, shrubs. Bentham and Hooker estimate the number of species at about 500; but Bunge, in his monograph of the Old-World species alone, enumerates 971; and in the recently published 'Botany of California' it is stated that there are nearly 150 species in North America. They are most abundant in Central Asia, very rare in the southern hemisphere, and altogether absent from Australia.

1. **Astragalus bigelowii,** A. Gray, Pl. Wright. ii. p. 42.

New Mexico; Texas.—North Mexico, valley of Santa Cruz, Sonora (ex *Torrey*).

2. **Astragalus cobrensis,** A. Gray, Pl. Wright. ii. p. 43, in adnot.

Texas; New Mexico.—North Mexico, Coahuila (*Bigelow*).

3. **Astragalus** (§ **Phaca**) **coriaceus,** n. sp.

Herbaceus, erectus, nanus, ramis crassiusculis flexuosis angulatis puberulis, foliolis 6–8-jugis longiuscule petiolulatis crassiusculis primum strigillosis lineari-oblongis obtusis distantibus, racemis paucifloris, calycis hirsuti tubo elongato, dentibus quam tubus quadruplo brevioribus, ovario glaberrimo, legumine coriaceo lævi glabro cylindrico crasso curvo longiuscule curvato-rostrato.

Herba perennis, specimina Coulteriana infra semipedalia; ramis erectis, flexuosis, angulatis, crassiusculis, puberulis, internodiis brevibus. *Folia* breviter petiolata, 1–2-pollicaria; foliola 6–8-juga, longiuscule petiolulata, crassiuscula, distantia, primum strigillosa, lineari-oblonga, 5–6 lineas longa, obtusa, venis costaque immersis; stipulæ omnino liberæ, lineari-lanceolatæ, circiter

2 lineas longæ, persistentes. *Flores* racemosi, breviter pedicellati, 6–8 lin. longi; racemi pauciflori (subtriflori in speciminibus Coulterianis), pedunculis folia æquantibus vel superantibus; bracteæ parvæ, subulatæ; calycis dense hirsuti tubus anguste campanulatus, dentibus subulatis quam tubus quadruplo brevioribus; ovarium glabrum. *Legumen* coriaceum, læve, glabrum, cylindricum, curvum, circiter 8 lineas longum et 3 lineas crassum, longiuscule curvato-rostratum.

North Mexico, Zacatecas (*Coulter*). Hb. Kew.

4. **Astragalus ervoides,** Hook. et Arn. Bot. Beech. Voy. p. 417.

South Mexico, San Blas to Tepic (*Sinclair*). Hb. Kew.

5. **Astragalus glareosus,** Dougl. in Hook. Fl. Bor.-Am. i. p. 152.

New Mexico.—North Mexico, Guadalupe Pass, Sonora.

6. **Astragalus (Phaca) guatemalensis,** n. sp.

Procumbens, reptans, glabrescens, foliolis 10–15-jugis brevissime petiolulatis oblongis emarginatis vel mucronulatis glaucis, stipulis amplis inter se coalitis longe acuminatis, racemis longiuscule pedunculatis densifloris 10–20-floris, floribus mediocribus breviter pedicellatis, calycis lobis subulatis tubum æquantibus, legumine oblongo glabro obcompresso sutura utraque præsertim dorsali impressa.

Herba perennis, procumbens, reptans, præter calyces cito glabrescens, ramis leviter sulcatis, internodiis breviusculis. *Folia* breviter petiolata, 2–4-pollicaria; foliola 10–15-juga, brevissime petiolulata, crebriuscula, oblonga, 3–6 lin. longa, emarginata, sæpissime mucronulata, glauca, juniora præcipue subtus parce albo-strigulosa; stipulæ a petiolo liberæ, inter se ad medium coalitæ, lanceolatæ, longe acuminatæ, usque semipollicares, scariosæ, persistentes. *Flores* racemosi, breviter pedicellati, circiter 8 lin. longi; racemi longiuscule pedunculati, 10–12-flori, dense bracteati, pedunculis quam folia longioribus; bracteæ scariosæ, lineari-lanceolatæ, 3–4 lin. longæ, persistentes; calycis nigro-hirsuti lobi subulati, tubum æquantes; vexillum calyce duplo longior. *Legumen* sessile, oblongum, vix pollicare, glabrum, obcompressum, circiter 10-spermum, suturis utraque, præsertim dorsali, impressa, longitudinaliter interstinctum.

Guatemala, in pine-forests, Volcan de Fuego (*Salvin & Godman*), Volcan de Fuego, 10,500 feet (*Salvin*). Hb. Kew.

This is evidently a close ally of *Astragalus reptans*; but it differs in having smaller, shorter leaves, long narrow stipules, and in the dorsal suture of the pod not being septiferous, as well as in some of its minor characters.

7. **Astragalus hartwegii,** Benth. Pl. Hartw. p. 10.

North Mexico, El Potrero, Sonora (*Schott*); South Mexico, Zimapan (*Coulter*), Aguas Calientes (*Hartweg*, 53), Tacubaya (*Bourgeau*, 337), near Guadalupe (*Bourgeau*, 483), Mexico (*Halsted*). Hb. Kew.

8. **Astragalus helleri,** Fenzl, ex Peyr. in Linnæa, xxx. p. 77, sine descriptione.

South Mexico, Orizaba, at 9000 feet (*Heller*).

9. **Astragalus humboldtii,** A. Gray, in Proc. Am. Acad. vi. p. 195, in adnot.

Phaca mollis, H. B. K. Nov. Gen. et Sp. vi. p. 496, t. 585.

North Mexico, region of San Luis Potosi (*Parry & Palmer*, 170, 171), Chihuahua

(*Potts*); South Mexico, in the valley of Mexico, near Gasave (*Humboldt & Bonpland*), Peñon Viejo, at 7000 feet (*Galeotti*, 3359), plain of Mexico (*Graham*), Llanos de Perote and between Tenestepeque and Quantotalapa (*Schiede & Deppe*), Yotla (*Andrieux*, 450), valley of Mexico (*Schaffner*, 107), without locality (*Bates*, 1). Hb. Kew.

10. **Astragalus hypoleucus,** Schauer in Linnæa, xx. p. 747.

South Mexico, in the mountains of Mexico (*Aschenborn*, 343).

11. **Astragalus leptocarpus,** Torr. & Gray, Fl. N. Am. i. p. 334; Gray in Proc. Am. Acad. vi. p. 200.

Texas.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 176). Hb. Kew.

12. **Astragalus mexicanus,** A. DC. Pl. Rar. Jard. de Genève, cinquième Not. p. 16, t. 3, excl. figg. 6 et 7.

Astragalus trichocalyx, Nutt.

This has not been found in Mexico proper, but in a contiguous part of Texas.

13. **Astragalus mollissimus,** Torr. in Ann. Lyc. N. York, ii. p. 178; Gray in Proc. Am. Acad. vi. p. 195.

New Mexico; Texas.—North Mexico, Chihuahua (*Potts*). Hb. Kew.

14. **Astragalus nuttallianus,** A. Gray, in Proc. Am. Acad. vi. p. 99.

Texas; New Mexico.—North Mexico, Coahuila, Chihuahua, and Sonora (*Torrey*).

15. **Astragalus nothoxys,** A. Gray, in Proc. Am. Acad. vi. p. 232.

North Mexico, North Sonora (*Smith*).

16. **Astragalus orthanthus,** A. Gray, in Proc. Am. Acad. vi. p. 195, in adnot.

South Mexico, sandy hills near Perote (*Halsted*). Hb. Kew.

17. **Astragalus (Euastragalus) oxyrhynchus,** n. sp.

Cæspitosus, incanus, ramis gracilibus numerosis adscendentibus, foliolis 6–9-jugis lineari-oblongis, racemis densis longe pedunculatis, floribus parvis, calycis nigro-hirsuti lobis subulatis tubum æquantibus, vexillo insigniter striato, legumine perfecte biloculari parvo ovato-oblongo aculeato-rostrato arcte reflexo.

Herba perennis, cæspitosa, incano-strigillosa, ramis e radice crassa numerosis adscendentibus gracilibus, dense foliosis, 6–9-pollicaribus. *Folia* usque bipollicaria; foliola 6–9-juga, breviter petiolulata, lineari-oblonga vel subovata, 3–5 lineas longa, obtusa, præcipue subtus albo-strigillosa; stipulæ oblongo-lanceolatæ, obtusæ vel acutæ, petiolo basi adnatæ, persistentes. *Flores* racemosi, brevissime pedicellati, $2\frac{1}{2}$–3 lin. longi; racemi longe pedunculati, densi, 15–20-flori, bracteati, pedunculis gracilibus quam folia longioribus; bracteæ scariosæ, lineari-subulatæ; calyx nigro-hirsutus, simul parce albo-strigillosus, lobis subulatis, tubum æquantibus; vexillum insigniter striatum. *Legumen* sessile, arcte reflexum, ovato-oblongum, circiter 3 lin. longum, glabrum, aculeato-rostratum, cylindricum, sutura dorsali intrusa, perfecte biloculare, oligospermum.

South Mexico, Tizapan, valley of Mexico (*Bourgeau*, 329). Hb. Kew.

A very distinct small-flowered species, remarkable for the prominently-striped standard and closely deflected small sharply-beaked pods.

18. **Astragalus (Euastragalus) parvus,** n. sp.

Cæspitosus, albo-strigillosus, ramis brevibus procumbentibus, foliolis 6–9-jugis parvis oblongis, stipulis late triangularibus arctissime reflexis, floribus parvis subcapitato-racemosis, racemis circiter 6-floris, bracteis minutis, calycis albo-strigillosi lobis subulatis quam tubus dimidio brevioribus, legumine parvo oblongo sutura dorsali impressa et intrusa biloculari.

Herba perennis, cæspitosa, parva, nana (specimina nostra forsan misera), albo-strigillosa, ramis e radice crassiuscula numerosis, 2–4-pollicaribus, gracilibus, procumbentibus. *Folia* usque bipollicaria; foliola 6–9-juga, breviter petiolulata, oblonga, circiter 2 lineas longa, obtusa, præcipue subtus albo-strigillosa; stipulæ late triangulares, arctissime reflexæ, persistentes. *Flores* subcapitato-racemosi, longiuscule pedicellati, vix 3 lineas longi; racemi circiter 6-flori, pedunculis quam folia paullum longioribus, bracteis minutis; calyx albo-strigillosus, lobis subulatis quam tubus dimidio brevioribus. *Legumen* oblongum, 4–6 lin. longum, dorso canaliculatum, brevissime albo-strigillosum, sutura dorsali impressa et intrusa, perfecte biloculare, oligospermum.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 174). Hb. Kew.

19. **Astragalus reptans,** Willd. Hort. Berol. ii. p. 88, t. 88.

South Mexico, Tacubaya, valley of Mexico (*Bourgeau*, 481), Chapultepec (*Bilimek*, 107). Hb. Kew.

20. **Astragalus sonoræ,** A. Gray, Pl. Wright. ii. p. 44.

New Mexico.—North Mexico, San Pedro, Sonoita, Sonora (*Wright*), Tubac, Sonora (*Parry*). Hb. Kew.

21. **Astragalus strigulosus,** H. B. K. Nov. Gen. et Sp. vi. p. 494.

Phaca elongata, Mart. et Gal.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 168, 169, 175); South Mexico, Cordillera of Oaxaca, 8000 feet (*Galeotti*, 3174), near Moran (*Humboldt & Bonpland*), Zimapan and Real del Monte (*Coulter*, 632), Llanos de Perote (*Schiede*), Mineral del Monte, near Pachuca (*Ehrenberg*), Zacoalco (*Bourgeau*, 700), without locality (*Ghiesbreght*, 159). Hb. Kew.

Var. **? gracilis,** Hemsley.

Caulibus pedunculisque gracilibus, pedunculis paucifloris.

South Mexico, Zimapan (*Coulter*, 631), Chiapas (*Ghiesbreght*, 590).

Var. **? brevidentatus,** Hemsley.

Fere glaber, spicis paucifloris, calycis dentibus brevibus.

Mexico (*Barker*). Cultivated specimens only in Hb. Kew.

22. **Astragalus thurberi,** A. Gray, Pl. Thurb. p. 220.

North Mexico, Fronteras, Sonora (*Thurber*, 372). Hb. Kew.

23. **Astragalus triflorus,** A. Gray, Pl. Wright. ii. p. 45.

Phaca triflora, DC.

Phaca candolliana, H. B. K. Nov. Gen. et Sp. vi. p. 495, t. 586.

New Mexico.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 173), Chihuahua, Coahuila (*Gregg*); South Mexico, Tepeacualco, on march down from Puebla to meet General Pierce (*Halsted*), without locality (*Coulter*, 627), valley of Mexico (*Schaffner*, 108). Hb. Kew.

24. **Astragalus vaccarum,** A. Gray, Pl. Wright. ii. p. 43.

North Mexico, Ojo de Vaca, Chihuahua (*Thurber*).

25. **Astragalus,** sp.

Phaca astragalina, Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 51, nec DC.

South Mexico, Cerro Ventoso, near Pachuca, north of Mexico, 7000 to 8000 feet (*Galeotti*, 3357).

This name belongs to an Old-World species, and is probably a mistake on the part of Martens and Galeotti.

28. OXYTROPIS.

Oxytropis, DC. Astragal. pp. 24 et 26; Benth. et Hook. Gen. Plant. i. p. 507.

A large genus of herbs and shrubs, often spiny, confined to the cold regions of the northern hemisphere. Hooker and Bentham state that there are nearly 100 species; but Bunge, in a monograph of the genus (1874), enumerates 181 species.

1. **Oxytropis lamberti,** Pursh, Fl. Am. Sept. ii. p. 277.

Oregon, southward to—North Mexico, Mimbres &c. (*Wright*). Hb. Kew.

This species scarcely comes within the limits of our territory.

29. GLYCYRRHIZA.

Glycyrrhiza, Linn. Gen. Plant. n. 882; Benth. et Hook. Gen. Plant. i. p. 508.

A genus of about twelve herbaceous perennial species, the greater number inhabiting the Mediterranean region and Temperate and Subtropical Asia. The genus is also represented in Western North America, in Extratropical South America, and in Australia by outlying species.

1. **Glycyrrhiza lepidota,** Nutt. Gen. Am. Pl. ii. p. 106; Bot. Mag. t. 2150.

Saskatchewan and down the western side of N. America to—North Mexico, Ojo de Vaca, Chihuahua (*Thurber*), Mimbres (*Wright*). Hb. Kew.

Tribe HEDYSAREÆ.

Between forty and fifty genera of herbaceous and shrubby plants, with a few arboreous species. They are generally dispersed, including the tropics.

30. CHÆTOCALYX.

Chætocalyx, DC. Mém. Leg. p. 262; Benth. et Hook. Gen. Plant. i. p. 513.

Climbing herbs. About eight species, of which one is a native of New Mexico, one of the West Indies, and the rest of Tropical South America, chiefly in Brazil and Mexico proper.

1. **Chætocalyx latisiliqua,** Benth. Bot. Voy. Sulph. p. 81, t. 30.
Planarium latisiliquum, Desv.

Panama, Empire railway-station (*S. Hayes*, 513), without locality (*Seemann*, 457).—Peru; Ecuador. Hb. Kew.

2. **Chætocalyx schottii,** Torr. Rep. Emory Exp. p. 56, t. 18.
North Mexico, Sierra Verde, Arroyo de las Samotas, Sonora (*Schott*).

3. **Chætocalyx wislizeni,** A. Gray, Pl. Wright. i. p. 51; Torr. Rep. Emory Exped. t. 18. figg. 5–7.

New Mexico.—North Mexico, Mount Carmel and mountains of Santa Rosa, Coahuila (*Parry & Bigelow*), Sonora (*Wright*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 133). Hb. Kew.

31. NISSOLIA.

Nissolia, Jacq. Stirp. Amer. p. 198; Benth. et Hook. Gen. Plant. i. p. 513.

Herbs or undershrubs. Only two or three well-defined species are known; and they are endemic in Tropical America.

1. **Nissolia fruticosa,** Jacq. Amer. p. 198, t. 179. fig. 44.
South Mexico, near Queretaro, 6000 feet (*Humboldt & Bonpland*), valley of Cordova (*Bourgeau*, 1477). Hb. Kew.

2. **Nissolia hirsuta,** DC. Prodr. ii. p. 257.
South Mexico, near Guanaxuato (*Née*), Aguas Calientes (*Hartweg*, 1597). Hb. Kew.

3. **Nissolia hirsuta,** DC.? ex Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 187.
South Mexico, Plains of Tehuacan and Etla, near Oaxaca, at 5000 feet, forests of Talea at 4000 feet, and savannas of Zacuapan and Mirador (*Galeotti*, 3224, 3294, 2419).
For some of these numbers see also under the other species.

4. **Nissolia platycarpa,** Benth. in Mart. Fl. Bras., Leg. p. 77.
South Mexico, Zimapan (*Coulter*, 584), ?ravines near Real del Monte (*Galeotti*, 3347). Hb. Kew.

5. **Nissolia,** sp.
South Mexico, plateau of Oaxaca (*Galeotti*, 3224). Hb. Kew.

32. POIRETIA.

Poiretia, Vent. Choix, t. 42, non Sm. nec Cav.; Benth. et Hook. Gen. Plant. i. p. 513.

About five herbaceous and shrubby species, all South-American, and chiefly Brazilian, one reaching Mexico:—

1. **Poiretia scandens,** Vent. Choix, t. 42.

Poiretia multiflora, Mart. et Gal.

South Mexico, Mirador (*Linden*, 697), savannas at 3000 feet, Vera Cruz (*Galeotti*, 3270); Costa Rica, Pacaca (*Ærsted*).—Southward to South Brazil and Peru. Hb. Kew.

33. AMICIA.

Amicia, H. B. K. Nov. Gen. et Sp. vi. p. 511; Benth. et Hook. Gen. Plant. i. p. 514.

Four shrubby species, inhabiting the Andes of America from Bolivia to Mexico.

1. **Amicia zygomeris,** DC. Prodr. ii. p. 315; Calques des Dess. Fl. Mex. 275; Bot. Mag. t. 4008.

South Mexico, in woods near Jalacingo (*Schiede & Deppe*), rivers near the Pacific Ocean, at 5500 to 8000 feet, Oaxaca (*Galeotti*, 3180; *Ghiesbreght*, 235), Zimapan (*Coulter*, 537). Hb. Kew.

34. PICTETIA.

Pictetia, DC. in Ann. Sc. Nat. sér. 1, ix. p. 93; Benth. et Hook. Gen. Plant. i. p. 514.

Six shrubby species, natives of Tropical America and the West Indies, one occurring in North Mexico:—

1. **Pictetia microphylla,** Benth. in Hemsley, Diag. Pl. Nov. pars 1, p. 8.

Fruticosa, glandulosa, foliis parvissimis, foliolis 4–5-jugis pilosis lanceolatis pungentibus, stipulis spinescentibus, floribus ad axillas fasciculato-racemosis, calyce persistente, legumine stipitato 3–4-spermo inter semina constricto.

Frutex ramulis, calycibus leguminibusque glandulosis, glandulis stipitatis. *Folia* petiolata, 4–5 lin. longa; foliola 4–5-juga, brevissime petiolulata, subtus sericeo-hirsuta, lanceolata, pungentia, vix sesquilineam longa; stipulæ spinescentes, ad 3 lineas longæ. *Flores* ad 9 lin. longi, pedicellati, racemosi; racemi tripollicares, ad axillos fasciculati; calyx persistens, 5-lobatus, lobis lanceolatis acutis, inter se subæqualibus, tubum æquantibus; petala subæquilonga, vexillo orbiculari; ovarium stipitatum, pluriovulatum, stylo hirsuto deorsum arcuato, stipite crasso. *Legumen* ad 3–4-spermum, inter semina constrictum.

North Mexico, Sonora Alta (*Coulter*), without locality (*Parkinson*). Hb. Kew.

Easily recognized by its minute leaves and large racemose flowers.

35. BRYA.

Brya, P. Br. Hist. Jam. p. 299; Benth. et Hook. Gen. Plant. i. p. 514.

Shrubs or small trees. Three species—one inhabiting Jamaica, one San Domingo, and the other Central America:—

1. **Brya nicaraguensis,** Œrst. in Vidensk. Meddel. 1853, p. 13.
NICARAGUA, Volcan el Viejo, at 2000 feet, and Segovia (*Œrsted*).

36. ORMOCARPUM.

Ormocarpum, Beauv. Fl. Ow. et Ben. i. p. 95, t. 58; Benth. et Hook. Gen. Plant. i. p. 515.

About six or eight shrubby species, one of which has a wide range in Tropical Africa, Asia, and Australia; two others are found in Tropical Africa; and the Mexican species may possibly belong to a distinct genus.

1. **Ormocarpum coccineum,** Don, Gen. Syst. ii. p. 279.
MEXICO.

2. **Ormocarpum elegans,** Don, Gen. Syst. ii. p. 279.
MEXICO.

3. **Ormocarpum thurberi,** Benth. et Hook. Gen. Pl. i. p. 515.
Daubentonia thurberi, A. Gray in Mem. Amer. Acad. v. p. 313.
NORTH MEXICO, Sonora (*Thurber*, 429). Hb. Kew.

4. **Ormocarpum,** ? sp.
MEXICO (*Sumichrast*). Hb. Kew.

37. ÆSCHYNOMENE.

Æschynomene, Linn. Gen. Plant. n. 888; Benth. et Hook. Gen. Plant. i. p. 515.

About thirty (or more) herbaceous and shrubby, or occasionally almost arborescent, species, some of them having a very wide range of distribution. Two are Australian, two East-Indian, eighteen Tropical-African, and a considerable number American.

1. **Æschynomene americana,** Linn. Sp. Pl. p. 1016; Sloane, Jamaica, i. t. 118. fig. 3.
NORTH MEXICO, San Luis Potosi to Tampico (*Palmer*, 1050); SOUTH MEXICO, Papantla (*Schiede & Deppe*), Orizaba (*Botteri*, 664, 665; *Bourgeau*, 3317, 3277, 3169), Jalisco (*Beechey*), Acapulco (*Sinclair*), Yucatan (*Linden*, 1343), Mirador (*Linden*, 1316), Vera Cruz (*Galeotti*, 3269), valley of Cordova (*Bourgeau*, 1706); GUATEMALA, Mazatenango (*Bernoulli*, 1181); NICARAGUA, Volcan el Viejo (*Œrsted*), Realejo (*Hinds*), near Granada (*Levy*, 391); COSTA RICA, Aguacate and Puntarenas (*Œrsted*); PANAMA, Chagres (*Fendler*, 97), without localities (*Seemann*, 456; *S. Hayes*, 274).—Very common in the WEST INDIES and many parts of Tropical AMERICA. Hb. Kew.

It is probable that several of the forms described as species by different authors and enumerated below will be found under this in Kew Herbarium.

2. **Æschynomene brasiliana,** DC. Prodr. ii. p. 322.
Æschynomene paucijuga, DC.

Panama (*Cuming*).—Tropical South America to Brazil, and in Trinidad and Cuba Hb. Kew.

3. **Æschynomene conferta,** Benth. in Ann. Nat. Hist. iii. p. 433.
Panama, savannas near the city of Panama (*Seemann*).—Guiana. Hb. Kew.

4. **Æschynomene elegans,** Schl. et Ch. in Linnæa, v. p. 583.
South Mexico, in open fields near Jalapa (*Schiede & Deppe*).

5. **Æschynomene falcata,** DC. Prodr. ii. p. 322.
Æschynomene gracilis, podocarpa et *tecta,* Vog.
South Mexico, Mirador (*Linden*, 708).—Northern parts of South America. Hb. Kew.

6. **Æschynomene fascicularis,** Schl. et Ch. in Linnæa, v. p. 584.
South Mexico, between La Laguna Verde and Actopan (*Schiede & Deppe*).

7. **Æschynomene floribunda,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 180.
South Mexico, borders of streams in Juquila and Tolotepec, Oaxaca (*Galeotti*, 3158).

8. **Æschynomene glandulosa,** Poir. Suppl. iv. p. 76.
South Mexico, Jalisco (*Lay & Collie*); Central America (*Ærsted*).—Panama (*Seemann*). Hb. Kew.

9. **Æschynomene hedysaroides,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 181.
South Mexico, savannas of Zacatepec, Oaxaca (*Galeotti*, 3184).

10. **Æschynomene hirsuta,** DC. Prodr. ii. p. 322.
South Mexico, Papantla (*Schiede & Deppe*); Costa Rica, savanna de San José (*Polakowsky*).

11. **Æschynomene hispida,** Willd. Sp. Pl. iii. p. 1163.
Æschynomene ciliata, Vog.
South Mexico, valley of Cordova (*Bourgeau*, 2210); Panama, ditches and marshes (*S. Hayes*, 326), Chagres (*Fendler*, 99).—Widely spread in Tropical and Subtropical America, both in the north and south, and in the West Indies. Hb. Kew.

12. **Æschynomene hispidula,** H. B. K. Nov. Gen. et Sp. vi. p. 530.
South Mexico, Orizaba (*Botteri*, 663; *Bourgeau*, 3185), without locality (*Jurgensen*, 511).—Brazil and Peru. Hb. Kew.

13. **Æschynomene hystrix,** Poir. Suppl. iv. p. 79.
South Mexico (*Bates*); Nicaragua, Volcan el Viejo (*Ærsted*).—West Indies, and in South America to Uruguay. Hb. Kew.

14. **Æschynomene lævis,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 181.
SOUTH MEXICO, Zacuapan, Vera Cruz, at 2000 to 3000 feet (*Galeotti*, 3261).

15. **Æschynomene paniculata,** Willd., ex Vog. in Linnæa, xii. p. 95.
SOUTH MEXICO, without locality (*Jurgensen*, 785).—TROPICAL S. AMERICA. Hb. Kew.

16. **Æschynomene sensitiva,** Sw. Fl. Ind. Occ. iii. p. 1276.
SOUTH MEXICO, region of Orizaba (*Bourgeau*, 3185); PANAMA, Chagres (*Fendler*, 100).—Nearly throughout the WEST INDIES and TROPICAL S. AMERICA to BRAZIL; also in WEST TROPICAL AFRICA. Hb. Kew.

17. **Æschynomene viscidula,** Michx. Fl. Bor.-Am. ii. p. 75.
FLORIDA, TEXAS, &c.—NORTH MEXICO, Matamoras (*Berlandier*, 2420). Hb. Kew.

18. **Æschynomene,** sp.
NORTH MEXICO, Sierra Madre (*Seemann*, 2189). Hb. Kew.

19. **Æschynomene,** sp.
SOUTH MEXICO, Acapulco (*Beechey*).

20. **Æschynomene,** sp.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1860). Hb. Kew.

38. STYLOSANTHES.

Stylosanthes, Swartz, Prodr. 108, et Fl. Ind. Occ. iii. p. 1280; Benth. et Hook. Gen. Plant. i. p. 517.

Woody herbs. About twenty species, five or six of which are dispersed in tropical and subtropical parts of Asia and Africa, and the rest are American. Two or three species are amphigæous.

1. **Stylosanthes glutinosa,** H. B. K. Nov. Gen. et Sp. vi. p. 507, t. 595.
SOUTH MEXICO, in sandy places near Acapulco (*Humboldt & Bonpland*).

2. **Stylosanthes guianensis,** Aubl. Guian. p. 776, t. 309.
SOUTH MEXICO, region of Orizaba (*Bourgeau*, 3365), savannas in the Cordillera of Vera Cruz (*Galeotti*, 3258), Hacienda de la Laguna (*Schiede*), without locality (*Sallé*); NICARAGUA, Realejo (*Sinclair*); COSTA RICA, Garidara (*Ærsted*).—Common in many distant parts of TROPICAL S. AMERICA. Hb. Kew.

3. **Stylosanthes humilis,** H. B. K. Nov. Gen. et Sp. v. p. 506, t. 594.
SOUTH MEXICO, pass of Ocaña, Oaxaca (*Galeotti*, 3155); NICARAGUA, Realejo (*Hinds*); PANAMA, without exact locality (*Seemann*, 205).—VENEZUELA and COLOMBIA. Hb. Kew.

4. **Stylosanthes procumbens,** Swartz, Fl. Ind. Occ. iii. p. 1282.
Stylosanthes mucronata, Willd.
Stylosanthes humilis, Rich., non H. B. K.
MEXICO (*Grisebach*).—Northern part of SOUTH AMERICA, JAMAICA, CUBA, &c.; also common in Tropical and Subtropical AFRICA and ASIA.

5. **Stylosanthes scabra,** Vog. in Linnæa, xii. p. 69.
NICARAGUA, Volcan el Viejo (*Œrsted*).—BRAZIL.

6. **Stylosanthes viscosa,** Sw. in Act. Holm. 1789, p. 296, t. 9. fig. 2; Fl. Ind. Occ. iii. p. 1285.
NORTH MEXICO, Cerro de Pinal (*Seemann*, 1540); SOUTH MEXICO, Manantial (*Schiede & Deppe*), Jalisco (*Beechey*); NICARAGUA, Volcan el Viejo (*Œrsted*).—Widely spread in the WEST INDIES and TROPICAL AMERICA; also in West Tropical AFRICA. Hb. Kew.

39. ARACHIS.

Arachis, Linn. Gen. Plant. n. 876; Benth. et Hook. Gen. Plant. i. p. 518.

Seven herbaceous species, six of which are endemic in Brazil, and the other is of uncertain origin, though most likely American.

1. **Arachis hypogæa,** Linn. Sp. Pl. p. 1040; Hook. Ic. Pl. t. 500.
SOUTH MEXICO, Orizaba (*Botteri*, 689); GUATEMALA, Chojoja, near Mazatenango (*Bernoulli*, 400); COSTA RICA (*Œrsted*). Hb. Kew.

This plant is commonly cultivated in tropical and subtropical regions, and is naturalized or wild in almost all tropical countries; but it is impossible to say where it is truly indigenous.

40. ZORNIA.

Zornia, Gmel. Syst. Nat. p. 1076; Benth. et Hook. Gen. Plant. i. p. 518.

About six herbaceous species, all American, two of them extending to Africa, and one almost ubiquitous in warm countries.

1. **Zornia diphylla,** Pers. Syn. ii. p. 318; Benth. in Mart. Fl. Bras. xv. p. 80, tt. 1, 2.
Zornia lævis, Ch. et Schl. in Linnæa, v. p. 582.
Zornia thymifolia, H. B. K. Nov. Gen. et Sp. vi. p. 514.
Zornia pubescens, H. B. K. loc. cit. p. 515.
Zornia reticulata, Sm., &c. &c.

A very variable plant, common in most tropical and subtropical regions throughout the WORLD, and occurring in nearly all collections from PANAMA, COSTA RICA, NICARAGUA, GUATEMALA, and MEXICO. Hb. Kew.

2. **Zornia tetraphylla,** Michx. Fl. Bor.-Am. ii. p. 76, t. 41.
Subtropical NORTH AMERICA.—NORTH MEXICO, Matamoras (*Berlandier*, 2447).—Also in Tropical WESTERN AFRICA, and commoner in SOUTH AFRICA. Hb. Kew.

41. DESMODIUM.

Desmodium, Desv. Journ. Bot. i. p. 122; Benth. et Hook. Gen. Plant. i. p. 519.

Herbs or shrubs, rarely arboreous. About 150 species, generally dispersed in tropical

and subtropical regions, except Europe; and a few in temperate North-east America and North-east Asia. Not one species has been recorded from California.

1. **Desmodium acuminatum,** DC. Prodr. ii. p. 329.

New York southward through the Eastern States.—South Mexico, near Jalapa (*Schiede & Deppe*, ex *Schlechtendal*).

2. **Desmodium adhæsivum,** Schl. in Linnæa, xii. p. 315.

South Mexico, near Jalapa (*Schiede*).

3. **Desmodium adscendens,** DC. Prodr. ii. p. 332.

Nicaragua, Graytown (*Tate*, 25); Panama, Chagres (*Fendler*, 77).—West Indies and Colombia to Guiana and Brazil; also found in Western Tropical Africa. Hb. Kew.

4. **Desmodium affine,** Schl. in Linnæa, xii. p. 312.

South Mexico, Yucatan and Tabasco (*Johnson*, 36), savannas in the Cordillera of Vera Cruz (*Galeotti*, 3304), without localities (*Sallé*, *Harris*). Hb. Kew.

5. **Desmodium alamani,** DC. Prodr. ii. p. 330.

Mexico (*Alaman*, *Parkinson*, *Graham*). Hb. Kew.

6. **Desmodium albiflorum,** Saltz. in Œrst. Leg. Centr. Am. p. 17.

South Mexico, shore of the Pacific Ocean, Oaxaca (*Galeotti*, 3166); San Salvador, Sonsonati (*Skinner*); Nicaragua, Realejo (*Œrsted*), without locality (*Tate*, 99); Costa Rica (*Œrsted*); Panama (*Seemann*). Hb. Kew.

7. **Desmodium ambiguum,** n. sp.

Fruticosum? glabrescens, nitidum, ramis teretibus, foliis parvis trifoliolatis graciliter petiolatis, foliolis ovato-oblongis apice fere rotundatis et apiculatis, apiculo deciduo, floribus parvis racemosis brevissime pedicellatis, racemis strictis subsessilibus axillaribus et terminalibus usque 9-pollicaribus, bracteis parvis striatis deciduis, calyce puberulo, stamine vexillari libero, ovario glabro subsessili circiter 5-ovulato.

Suffrutex vel *herba*, perennis, ramis teretibus, graciliusculis, primum minutissime puberulis, dein glabris, obscure striatis. *Folia* petiolata, pinnatim trifoliolata; foliola longiuscule petiolulata, membranacea, ovato-oblonga vel interdum fere lanceolata, 1–2-pollicaria, basi cuneata, apice rotundata et apiculata (apiculo deciduo), juniora utrinque parcissime obscurissime setulosa, demum glaberrima, nitida, petiolo filiformi quam foliola breviore; stipulæ lineari-subulatæ, striatæ, $1\frac{1}{2}$–2 lin. longæ. *Flores* parvi, racemosi; racemi stricti, subsessiles, axillares et terminales, usque 9-pollicares; bracteæ stipulis simillimæ cito deciduæ; calyx puberulus; stamen vexillare liberum; ovarium glabrum, subsessile, circiter 5-ovulatum. *Legumen* a nobis non visum.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 933). Hb. Kew.

8. **Desmodium (§ Chalarium) amplifolium,** n. sp.

Fruticosum, novellis argenteo-sericeo-pilosis, ramis crassiusculis, foliis amplis trifoliolatis, foliolis ovatis vel lanceolatis acuminatis basi rotundatis supra minute hispidulo-puberulis subtus sericeo-pilosis et venis lateralibus elevatis, floribus mediocribus dense racemosis, racemis axillaribus et terminalibus breviusculis primum comoso-bracteatis, bracteis amplis mox deciduis,

pedicellis suberectis, ovario puberulo, legumine cito glabrescente circiter 5-articulato, articulis ellipticis.

Frutex novellis dense argenteo-sericeo-pilosis, ramis rectis, robustis, demum glabris atro-purpureis. *Folia* petiolata, pinnatim trifoliolata; foliola longiuscule petiolulata, late ovata vel ovato-lanceolata, maxima usque 5 poll. longa et 2 poll. lata, basi late rotundata, apice acuminata, supra minute hispidulo-puberula, subtus sericeo-pilosa, petiolo 1–1½ poll. longo; stipulæ deciduæ a nobis non visæ. *Flores* rosei, mediocres, dense racemosi; racemi axillares et terminales, 2–3-pollicares, primum comoso-bracteati; bracteæ late ovatæ vel ellipticæ, acuminatæ, circiter semipollicares, cito glabræ, atro-fuscæ, tenuiter striatæ; pedicelli puberuli, graciles, 3–4 lin. longi; calyx membranaceus, glabrescens, lobis subulatis; ovarium puberulum. *Legumen* (juniora tantum visa) cito glabrum, circiter 5-articulatum, infrapollicare (tortum?), articulis ellipticis.

South Mexico, Cordillera of Oaxaca (*Ghiesbreght*), at 7000 to 8000 feet (*Galeotti*, 3168), Chiapas &c. (*Ghiesbreght*, 583). Hb. Kew.

This species comes near *D. strobilaceum*, Schl., differing in its large leaves, ovate or lanceolate leaflets, short racemes, and glabrous pod.

9. **Desmodium angustifolium,** DC. Prodr. ii. p. 328.

Hedysarum angustifolium, H. B. K.

South Mexico, Cordillera of Vera Cruz (*Galeotti*, 3316), Vera Cruz to Orizaba (*Müller*, 283), Orizaba (*Botteri*, 693), Juquila, Cordillera of Oaxaca, at 4000 feet (*Galeotti*, 3154); Nicaragua, Volcan el Viejo (*Œrsted*); Panama, in meadows near the city of Panama (*Seemann*, 204). Hb. Kew.

10. **Desmodium annuum,** A. Gray, Pl. Wright. ii. p. 46.

North Mexico, Santa Cruz, Sonora (*Thurber*), Sonoita (*Wright*).

Grisebach refers this to *D. spirale*, which is widely dispersed in America and the West Indies, and also occurs in Tropical Africa and some of the Pacific islands.

[*D. axillare*, DC., syn. *D. reptans*, DC., and *D. radicans*, Macf., is a common species, ranging from Brazil and Peru to Colombia, Venezuela, Guiana, and the West Indies, and likely to occur in Central America and Mexico.]

11. **Desmodium barbatum,** Benth. et Œrst. Leg. Centr. Am. p. 18.

Nicolsonia cayennensis, DC.

South Mexico, Orizaba (*Botteri*, 698; *Müller*, 558; *Bourgeau*, 2996); Nicaragua, Volcan el Viejo (*Œrsted*); Costa Rica, Volcan de Irazu, Aguacate (*Œrsted*); Panama, Chagres (*Fendler*, 76), Empire railway-station (*S. Hayes*, 585), without locality (*Seemann*, 229).—A very common plant throughout the West Indies and Tropical South America. Hb. Kew.

12. **Desmodium barclayi,** Benth. Bot. Voy. Sulph. p. 83.

Guatemala, Mazatenango (*Bernoulli*, 1196); Nicaragua (*Barclay*); Panama, Paraiso railway-station (*S. Hayes*, 511).—Venezuela. Hb. Kew.

13. **Desmodium brachystachyum,** Schl. in Linnæa, xii. p. 321.

Mexico.

14. **Desmodium batocaulon,** A. Gray, Pl. Wright. ii. p. 47.

New Mexico.—North Mexico, stony banks of small streams, Sonora (*Wright*). Hb. Kew.

15. **Desmodium bigelowii,** A. Gray, Pl. Wright. ii. p. 47.

North Mexico, valley of the San Pedro, Sonora (*Wright*).

Grisebach refers this to *D. spirale*, DC.

16. **Desmodium cajanifolium,** DC. Prodr. ii. p. 331.

South Mexico, Orizaba (*Botteri*, 699); Panama, Empire railway-station (*S. Hayes*, 575), without habitats (*Seemann*, 458; *Halsted*).—Southward to Peru and Brazil and in Trinidad. Hb. Kew.

17. **Desmodium (§ Chalarium) callilepis,** n. sp.

Herbaceum, adscendens vel procumbens, parce pilosulum, ramis gracilibus elongatis striatis, foliis parvis petiolatis trifoliolatis, foliolis lanceolato-oblongis usque suborbicularibus utrinque sparse setulosis, stipulis bracteisque fusco-purpureis striatis persistentibus, floribus mediocribus racemosis, racemis terminalibus axillaribusve, bracteis bracteolisque elongatis lanceolato-subulatis, pedicellis filiformibus sæpissime geminis, calyce colorato pilosulo, lobis inæqualibus, legumine recto vel leviter curvato subplano juniore dense hirsuto 6–7-articulato, articulis ellipticis.

Herba ramosa, ramis gracilibus, elongatis, 3–4-pedalibus, adscendentibus vel procumbentibus, primum debiliter pilosis, dein glabris, flexuosis, striatis. *Folia* graciliter breviterque petiolata, pinnatim trifoliolata; foliola brevissime petiolulata, membranacea, ovato-oblonga, elliptica vel fere orbicularia, maxima sesquipollicaria (foliorum inferiorum foliola elliptica vel orbicularia 3–4 lin. diametro), apice sæpissime apiculata, utrinque sparse setulosa, demum fere glabra, reticulato-venosa, venis subtus elevatis; stipulæ fusco-purpureæ, striatæ, e basi lata longe acuminatæ, circiter 3 lineas longæ, reflexæ, persistentes. *Flores* purpurei, mediocres, racemosi; racemi elongati (usque pedales et ultra), axillares et terminales, sæpe simplices, laxi, pedicellis filiformibus, sæpissime geminis patentibus, basi bractea et bracteolis duabus suffultis; bracteæ bracteolæque purpureæ, lineares vel lanceolato-subulatæ, 4–5 lineas longæ, striatæ, persistentes; calyx coloratus, pilosulus, lobis inæqualibus; ovarium hirsutum. *Legumen* (juniora tantum visa) rectum vel leviter curvatum, angustum, subplanum, dense hirsutum, 6–7-articulatum, articulis ellipticis.

South Mexico, valley of Mexico, Pedregal and Santa Fé (*Bourgeau*, 332, 582). Hb. Kew.

This species resembles the robust states of *D. spirale*, DC., of which it has the persistent bracts; but our plant is apparently perennial, and it has a very different pod.

18. **Desmodium (§ Chalarium) campyloclados,** n. sp.

Fruticosum? volubile, ramis graciliusculis tortuosis tenuiter uncinato-puberulis, foliis parvis trifoliolatis graciliter petiolatis, foliolis brevissime petiolulatis tenuissimis ovato-lanceolatis acutis apiculatis utrinque (præcipue subtus) appresse molliterque hirsutis, floribus laxissime racemoso-paniculatis, panicularum ramulis pedicellisque valde tortuosis elongatis fere filiformibus, legumine uncinato-puberulo vix asperulo, sæpe 4–5-articulato, articulis oblique ovatis.

Frutex? volubilis, ramis graciliusculis, tortuosis, virgatis, tenuiter uncinato-puberulis, internodiis brevibus. *Folia* graciliter petiolata, pinnatim trifoliolata; foliola brevissime petiolulata,

tenuissima, ovato-lanceolata, 1–2-pollicaria, interdum minora, basi rotundata, apice acuta, sæpissime apiculata, utrinque (præcipue subtus) appresse molliterque hirsuta, pilis rectis, petioli parte sub foliolis 6–12 lin. longa; stipulæ parvæ, deciduæ; stipellæ subulatæ. *Flores* parvi, laxissime racemoso-paniculati, panicularum ramulis pedicellisque elongatis, valde tortuosis, fere filiformibus; pedicelli usque 9 lineas longi, solitarii vel gemini patentes distantes; bracteæ deciduæ non visæ. *Legumen* uncinato-puberulum, vix asperulum, sæpe 4–5-articulatum, 9–12 lin. longum, articulis oblique ovatis.

Nicaragua, Segovia (*Ærsted*); Costa Rica, Candelaria (*Ærsted*). Hb. Kew.

The thin foliage, combined with an exceedingly slender tortuous habit, distinguishes this species.

19. **Desmodium cinerascens,** A. Gray, Pl. Wright. ii. p. 48.

New Mexico.—North Mexico, Sonora (*Wright*). Hb. Kew.

20. **Desmodium cinereum,** DC. Prodr. ii. p. 330.

Hedysarum cinereum, H. B. K. Nov. Gen. et Sp. vi. t. 599.

South Mexico, between Acapulco and Mexico, near Mescala and Chilpancingo, at 1560 to 4200 feet (*Humboldt & Bonpland*).

21. **Desmodium cordistipulum,** n. sp.

Herbaceum, erectum, fere omnino glaberrimum, caulibus graciliusculis angulatis, internodiis longiusculis, foliis trifoliolatis, foliolis lanceolatis obtusiusculis vel apiculatis discoloribus, stipulis persistentibus amplissimis oblique cordatis amplexicaulibus striatis apice subulatis, floribus mediocribus laxe racemosis, racemis longe graciliterque pedunculutis, bracteis cito deciduis, legumine juniore puberulo circiter 5-articulato, articulis sibi invicem replicatis.

Herba elegans, pluripedalis, fere omnino glaberrima et nitida, caulibus erectis, graciliusculis, angulatis, castaneis, internodiis longiusculis. *Folia* breviter gracilliterque petiolata, pinnatim trifoliolata; foliola brevissime petiolulata, lanceolata vel fere oblonga, $1\frac{1}{2}$ $2\frac{1}{2}$-pollicaria, basi rotundata, apice obtusiuscula vel apiculata, discoloria, subtus pallidiora, reticulato-venosa; stipulæ maximæ, persistentes, striatæ, basi late oblique cordatæ, amplexicaules, apice longiuscule subulatæ. *Flores* purpurei, mediocres, laxe racemosi; racemi longe graciliterque pedunculati, cum pedunculis usque sesquipedales, pauciflori, juniores apice comoso-bracteati; bracteæ ovato-subulatæ, basi angustæ, valde deciduæ; pedicelli graciles, solitarii vel gemini, 3–4 lineas longi; calyx coloratus. *Legumen* (valde juvenile tantum visum) puberulum, circiter 5-articulatum, articulis sibi invicem replicatis.

South Mexico, Oaxaca (*Ghiesbreght*). Hb. Kew.

In habit, foliage, and inflorescence this species closely resembles the North-American *D. cuspidatum*, Torr. & Gray (*D. bracteosum*, Michx.); but the latter wants the cordate stem-clasping stipules and the folded pod of our plant, which also differs in its leaflets, smaller flowers, and bracts.

22. **Desmodium ? densiflorum,** n. sp.

Fruticosum, ramis graciliusculis teretibus, foliis parvis trifoliolatis, foliolis lanceolato-oblongis mucronulatis utrinque strigillosis, floribus sessilibus dense spicatis, spicis brevissimis axillaribus et terminalibus bracteatis, bracteis albo-sericeo-pilosis latis longe acuminatis persistentibus, calyce dense longeque sericeo-piloso, ovario longiuscule stipitato glabro 4-ovulato marginato.

Frutex ramis teretibus graciliusculis, primum pilosis, demum glabris. *Folia* petiolata, pinnatim trifoliolata; foliola lanceolato-oblonga, 2–2½-pollicaria, basi rotundata vel subcuneata, apice mucronulata, utrinque dense strigilloso-pilosa, subtus pallidiora, petioli parte sub foliolis 6–10 lin. longa; stipulæ deciduæ non visæ; stipellæ longæ, subulatæ. *Flores* mediocres, sessiles, dense spicati; spicæ vix pollicares, axillares et terminales, bracteatæ, bracteis albo-sericeo-pilosis, late ellipticis, longe acuminatis, persistentibus quam flores brevioribus; calyx dense longeque sericeo-pilosus; ovarium longiuscule stipitatum, glabrum, 4-ovulatum, marginatum. *Legumen* a nobis non visum.

South Mexico, without localities (*Parkinson*, *Linden*). Hb. Kew.

This plant was intermixed with *D. strobilaceum*, from which it is very distinct, and is easily distinguished by its short dense bracteate flower-spikes. Possibly it may not be a true *Desmodium*.

23. **Desmodium diversifolium,** Schl. in Linnæa, xii. p. 313 (=*D. incanum*, DC.?).

South Mexico, Hacienda de la Laguna (*Schiede*).

24. **Desmodium elegans,** Schl. in Linnæa, p. 320.

Mexico (*Hegewisch*).

25. **Desmodium exiguum,** Pl. Wright. ii. p. 46.

North Mexico, Santa Cruz, Sonora (*Thurber*), Sonoita (*Wright*).

26. **Desmodium (§ Chalarium) foliosum,** n. sp.

Suffruticosum vel herbaceum, præter pedicellos et calyces glabrum vel glabrescens, ramis subangulatis, foliis longiuscule petiolatis trifoliolatis, foliolis membranaceis lanceolatis basi rotundatis apice mucronulatis, floribus parvis numerosis dense racemoso-paniculatis breviter pedicellatis, paniculis brevibus lateralibus et terminalibus foliosis, ovario 4–5-ovulato breviter stipitato, legumine lævi tenui anguste elongato sæpissime quadriarticulatis, articulis oblongis.

Suffrutex (vel *herba* sublignosa), præter pedicellos et calyces puberulos glaber vel glabrescens, ramis subangulatis viridibus. *Folia* petiolata, pinnatim trifoliolata, pallide viridia; foliola eleganter lanceolata, sesqui- usque tripollicaria, lateralia quam terminale tertio parte minora, omnia basi rotundata, apice mucronulata, reticulato-venosa, venis primariis lateralibus prominulis arcuatim abeuntibus, margine nervosa, juniora subtus interdum parce puberula, petiolo gracili, circiter pollicari; stipulæ parvæ, oblique lanceolatæ, acuminatæ, purpureæ, striatæ, reflexæ, cito deciduæ; stipellæ longiusculæ, subulatæ. *Flores* parvi, roseo-purpurei, numerosi, dense racemoso-paniculati; paniculæ breves, laterales et terminales foliosæ, ramulis graciliusculis; pedicelli 2–3 lin. longi, solitarii, gemini vel terni; bracteæ bracteolæque parvæ, striatæ, subulatæ, persistentes; ovarium breviter stipitatum, glabrum. *Legumen* rectum, læve, tenue, sæpissime quadriarticulatum, interdum 5-articulatum, articulis oblongis, obscure reticulato-venosis, circiter semipollicem longis, 1½–2 lineas latis.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 897), Vera Cruz to Orizaba (*Müller*, 1466), Orizaba (*Sumichrast*, 1735). Hb. Kew.

This is closely allied to *D. nitidum*, Mart. et Gal. (see remarks under that species).

27. **Desmodium** (§ **Chalarium**) **ghiesbreghtii,** n. sp.

Fruticosum vel suffructicosum, ramis elongatis puberulis, internodiis brevibus, foliis mediocribus longiuscule graciliterque petiolatis trifoliolatis, foliolis longiuscule petiolulatis subcoriaceis ovato-oblongis vel ellipticis glaberrimis minute reticulato-venosis subtus pallidioribus, floribus mediocribus racemoso-paniculatis, paniculis terminalibus amplis, bracteis cito deciduis, legumine glabro 4–6-articulato, articulis ellipticis.

Frutex vel *suffrutex,* ramis elongatis, rectis, crassiusculis petiolisque puberulis, fusco-purpureis, internodiis brevibus. *Folia* graciliter petiolata, pinnatim trifoliolata; foliola longiuscule (1–1½ lin.) petiolulata, subcoriacea, ovato-oblonga usque elliptica, 1–2-pollicaria, basi rotundata, apice obtusa, omnino glaberrima, utrinque prominenter minute reticulato-venosa, subtus pallidiora fere glauca, petioli filiformis parte sub foliolo usque bipollicari; stipulæ et stipellæ deciduæ a nobis non visæ. *Flores* mediocres, racemoso-paniculati; paniculæ multifloræ, terminales, elongatæ, sesquipedales et ultra; pedicelli 1–2 lin. longi; bracteæ latæ, acuminatæ, ante anthesin deciduæ; calyx puberulus, lobis inæqualibus obtusiusculis; ovarium puberulum, 4–6-ovulatum. *Legumen* (immatura tantum visa) glabrum, vix semipollicare, 4–6-articulatum, articulis ellipticis.

South Mexico, province of Oaxaca (*Ghiesbreght*). Hb. Kew.

This is the only species we have observed in which the stipels fall off quite early.

28. **Desmodium ? glabrum,** DC. Prodr. ii. p. 338.

Hedysarum glabrum, Mill.

South Mexico, Campeche.

29. **Desmodium gracile,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 182.

South Mexico, near Talea, Oaxaca, at 4000 to 5000 feet (*Galeotti*, 3416).

30. **Desmodium** (§ **Chalarium**) **hartwegianum,** n. sp.

Herbaceum, erectum, sparsim albo-pilosum, foliis subsessilibus trifoliolatis, foliolis oblongis vel interdum fere obovatis reticulato-venosis, venis subtus prominentibus, apice rotundatis sæpissime apiculatis, stipulis elongatis lanceolato-subulatis, floribus maximis in racemos simplices terminales longissimos dispositis, racemis apice comoso-bracteatis, bracteis amplis mox deciduis, calyce colorato glabrescente, legumine fulvo uncinato-puberulo sæpissime 6-articulato, articulis oblongo-orbicularibus.

Herba erecta, 2–3-pedalis et forsan ultra, caulibus (simplicibus?) graciliusculis (vix 2 lin. diametro), castaneis, tenuiter albo-pilosis, striatis, infra dense foliosis. *Folia* brevissime petiolata, pinnatim trifoliolata; foliola oblonga vel interdum fere obovata, 1½–3 poll. longa, lateralia minora, basi cuneata, apice rotundata et sæpissime apiculata, utrinque parce pilosa, pilis debilibus, albis, reticulato-venosis, venis subtus prominentibus; stipulæ pilosæ, lanceolato-subulatæ, usque semipollicares, diu persistentes; stipellæ breves, subulatæ. *Flores* roseo-purpurei, semipollicares, racemosi; racemi simplices, terminales, laxi, usque sesquipedales, apice comoso-bracteati, bracteis fuscis, fere orbicularibus, acuminatis, concavis, striatis, ciliatis, valde deciduis; calyx coloratus, leviter puberulus, alte lobatus, lobis acutis; petala patentia; ovarium hirsutum. *Legumen* breviter stipitatum, fulvum, uncinato-puberulum, vix asperulum, sæpissime 6-articulatum, 1–1½ poll. longum, articulis oblongo-orbicularibus.—*Desmodium strobilaceum*, Benth. Pl. Hartw. p. 11, nec Schl.

South Mexico, Aguas Calientes (*Hartweg*, 56). Hb. Kew.

Allied to *D. canadense*, Linn., and *D. sessilifolium*, Torr. & Gray, but differing

from both in its unbranched inflorescence, from the latter in its much larger flowers, and from the former in the pubescence and venation of the leaves, in the larger stipules, and in the nearly equal constriction of both sutures of the pod.

31. **Desmodium helleri,** Peyr. in Linnæa, xxx. p. 79.

South Mexico, Zacuapan, 2000 feet (*Heller*, 48).

32. **Desmodium heterophyllum,** Hook. et Arn. Bot. Beech. Voy. p. 417.

Nicaragua, Realejo (*Sinclair*). Hb. Kew.

33. **Desmodium hirsutum,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 186.

South Mexico, savannas and woods of Zacuapan and Mirador, 2500 to 3500 feet (*Galeotti*, 3275). Hb. Kew.

34. **Desmodium incanum,** DC. Prodr. ii. p. 332.

Desmodium ancistrocarpum, DC.

South Mexico, Orizaba (*Botteri*, 710; *Bourgeau*, 2921); Nicaragua, Graytown (*Tate*, 97); Costa Rica, Angostura (*Polakowsky*); Panama (*Seemann*, 227; *Sinclair*; *Fendler*, 78).—An exceedingly common plant in the West Indies and Eastern Tropical Americaa; also in Tropical Africa and the Mauritius. Hb. Kew.

Var. ?

South Mexico, Chalco (*Andrieux*, 456), Cordillera of Oaxaca, 3000 feet (*Galeotti*, 3407), without locality (*Harris*). Hb. Kew.

35. **Desmodium infractum,** DC. Prodr. ii. p. 330; Calques des Dess. Fl. Mex. 269.

Mexico.

36. **Desmodium (§ Heteroloma) lamprocarpum,** n. sp.

Herbaceum vel suffruticosum, ramis gracillimis glabrescentibus, foliis longe graciliterque petiolatis trifoliolatis, foliolis ovato-oblongis vel fere ellipticis tenuibus utrinque minutissime puberulis simul parcissime setulosis, floribus mediocribus densiuscule racemoso-paniculatis, ovario stipitato puberulo 4-ovulato, legumine immaturo glabrescente nitido 2–4-articulato, articulis subreniformibus.

Herba vel *suffrutex*, ramis gracillimis, minutissime puberulis, cito glabrescentibus, angulatis vel striatis, nitidis, internodiis quam folia brevioribus. *Folia* longe graciliterque petiolata, pinnatim trifoliolata; foliola approximata, breviter petiolulata, ovato-oblonga vel elliptica, 1–1½ poll. longa, tenuia, nitida, utrinque minutissime puberula, simul parcissime setulosa, petiolo (foliorum superiorum) 1–2-pollicari; stipulæ parvæ, atræ, lineari-subulatæ, reflexæ, persistentes; stipellæ filiformes. *Flores* mediocres, densiuscule racemoso-paniculati; racemi 4–5 poll. longi, ramulis fere filiformibus; bracteæ lineares, cito deciduæ; pedicelli sæpissime gemini, vere filiformes, 3–4 lin. longi; calyx setulosus, lobis inæqualibus, vix acutis; ovarium longiuscule stipitatum, puberulum, 4-ovulatum. *Legumen* (immaturum tantum visum) glabrescens, nitidum, planum, 2–4-articulatum, articulis subreniformibus, fere semipollicaribus.

South Mexico, Chiapas &c. (*Ghiesbreght*, 587). Hb. Kew.

In habit generally this approaches *D. nitidum*, Mart. et Gal., and *D. callilepis*, Hemsley; but it is readily distinguished by its very different bracts and pods.

37. **Desmodium** (§ **Heteroloma**) **leptoclados,** Hemsl. Diag. Pl. Nov. pars 3, p. 44.

Herbaceum, ramis gracillimis adscendentibus glabris nitidis, foliis parvis trifoliolatis, foliolis ovato-oblongis interdum fere ellipticis utrinque appresse setulosis, petiolo filiformi, stipulis persistentibus, floribus mediocribus laxe racemosis longiuscule pedicellatis, ovario hirsuto 4–6-ovulato, legumine uncinulato-puberulo sæpissime 4–6-articulato, articulis dolabriformibus.

Herba perennis, ramis gracillimis, adscendentibus, glabris, nitidis, fusco-purpureis, striatis, usque ad sesquipedalibus, internodiis quam folia brevioribus. *Folia* petiolata, pinnatim trifoliolata; foliola breviter petiolulata, membranacea, ovato-oblonga vel interdum fere elliptica, 9–15 lin. longa, basi rotundata, apice obtusa vel apiculata, utrinque appresse setulosa; petioli filiformis parte sub foliolis 6–9 lin. longa; stipulæ e basi latiore lineari-subulatæ, fuscæ, 2–3 lin. longæ, reflexæ vel patentes; stipellæ subulatæ. *Flores* mediocres, laxe racemosi; racemi pauciflori, terminales vel axillares, sæpe simplices, longe pedunculati, cum pedunculis usque 9-pollicares; bracteæ late ovato-acuminatæ, deciduæ; pedicelli filiformes, 6–9 lin. longi; calyx setulosus, lobis inæqualibus; ovarium hirsutum, 4–6-ovulatum. *Legumen* brevissime stipitatum, uncinato-puberulum, 12–15 lin. longum, sæpissime 4–6-articulatum, articulis dolabriformibus.

South Mexico, Zimapan (*Coulter*), Vera Cruz to Orizaba (*Müller*, 1698). Hb. Kew.

38. **Desmodium limense,** Hook. Bot. Misc. iii. p. 195.

Guatemala, without locality (*Skinner*).—Peru. Hb. Kew.

39. **Desmodium linearifolium,** DC. Prodr. ii. p. 327.

The native country of this plant is probably Mexico. It is perhaps the same as *D. angustifolium*, DC., of which, however, we have not seen the type.

40. **Desmodium lupulinum,** Schl. in Linnæa, xii. p. 317.

South Mexico, near Jalapa (*Schiede*), Mirador, at 3000 feet (*Heller*), Jacuapan (*Galeotti*, 3271); Costa Rica (*Œrsted*), San José (*Polakowsky*). Hb. Kew.

41. **Desmodium** (§ **Chalarium**) **macropodium,** Hemsl. Diag. Pl. Nov. pars 3, p. 44.

Herbaceum, procumbens, uncinato-hispidulum, foliis trifoliolatis, foliolis ovatis ellipticisve utrinque tuberculato-strigillosis, floribus parvis racemosis, racemis paucifloris longe pedunculatis adscendentibus per anthesin apice comoso-bracteatis, pedunculis nudis, calycis glabrescentis lobis fere æqualibus ovatis acutis, vexillo alas et carinam involvente, legumine uncinato-puberulo sæpe 5-articulato, articulis oblique ovatis.

Herba procumbens, ramis brevibus uncinato-hispidulis. *Folia* petiolata, pinnatim trifoliolata; foliola ovata vel elliptica, 9–15 lin. longa, utrinque rotundata, apice apiculata, omnino tuberculato-strigillosa, petiolo circiter pollicari; stipulæ ovatæ, acuminatæ, 3–4 lin. longæ, fuscæ, striatæ. *Flores* purpurei, 3–4 lin. longi, racemosi; racemi terminales, pauciflori, laxi, simplices, longe pedunculati, adscendentes, in specimine nostro unico 15 poll. longi, per anthesin apice comoso-bracteati; pedunculi nudi; bracteæ late ellipticæ, acuminatæ, ciliatæ, deciduæ; pedicelli graciles, 5–7 lin. longi; calyx glabrescens, lobis ovatis, acutis, subæqualibus; vexillum latum, apice fere truncatum, alas et carinam involvens. *Legumen* uncinato-puberulum, circiter pollicare, sæpe 5-articulatum, articulis oblique ovatis.

South Mexico, Pedregal (*Bilimek*, 114). Hb. Kew.

With the habit of *D. axillare*, DC., this has terminal racemes, almost glabrous flowers, and both sutures of the pod constricted, &c.

42. **Desmodium** (§ **Heteroloma**) **macrostachyum,** Hemsl. Diag. Pl. Nov. pars 3, p. 44.

Herbaceum, elatum, caulibus simplicibus crassiusculis profunde sulcatis breviter uncinato-hispidis, foliis amplis trifoliolatis, foliolis elongatis lanceolato-oblongis acuminatis acutis supra glabris subtus secus venas et ad marginem appresse setulosis, floribus mediocribus in racemos terminales longissimos strictissimos dispositis, legumine angusto 6–8-articulato densissime uncinato-hispido arctissime reflexo.

Herba pluripedalis, caulibus erectis, simplicibus, crassiusculis, in siccis profunde sulcatis, intus medullosis, extus omnino breviter uncinato-hispidis, internodiis quam folia multo brevioribus. *Folia* usque 9-pollicaria et ultra, longe petiolata, pinnatim trifoliolata; foliola breviter petiolulata, crassiuscula nec coriacea, lanceolato-oblonga, 4–7 poll. longa, maxima 1 poll. lata, gradatim acuminata, acuta, utrinque prominenter venosa, venis primariis lateralibus elongatis, subtus conspicuis, cum costa angulos acutos formantibus, pagina superiore glabra, inferiore præcipue secus costam et venas et ad marginem appresse setulosa; petiolo glabro, toto 2–3-pollicari, parte sub foliolis $1\frac{1}{2}$–2-pollicari; stipulæ e latissima basi filiformi-acuminatæ, arcte appressæ, striatæ, usque pollicares; stipellæ lineari-subulatæ, semipollicares et ultra. *Flores* mediocres, in racemos simplices terminales angustos longissimos dispositi; racemi usque sesquipedales; pedicelli sæpe gemini, reflexi, circiter 2 lin. longi; calyx coloratus, glaber, lobis latis vix acutis. *Legumen* angustum (maturum non visum), vix pollicare, 6–8-articulatum, densissime uncinato-hispidum, deorsum supra rhachin arctissime appressum.

South Mexico, Oaxaca (*Ghiesbreght*). Hb. Kew.

This species is characterized by its tall simple barbellate stems; long, nearly naked leaves; the very long narrow terminal racemes, and by the pods being turned down and closely applied to the rhachis.

43. **Desmodium** (§ **Chalarium**) **madrense,** Hemsl. Diag. Pl. Nov. pars 3, p. 45.

Fruticosum vel suffruticosum, ramosum, ramis graciliusculis teretibus sparsim pilosis, foliis amplis trifoliolatis, foliolis lanceolato-oblongis vel ovato-oblongis acuminatis mucronulatis discoloribus subtus pallidioribus junioribus subtus petiolisque patentim pilosis, floribus mediocribus racemoso-paniculatis, paniculis brevibus, ovario puberulo circiter 7-ovulato, legumine glabro sæpe 5–7-articulato, articulis suborbicularibus.

Frutex vel *suffrutex* ramosus, novellis plus minusve pilosis, ramis graciliusculis, teretibus, primum sparsim pilosis, atro-fuscis. *Folia* petiolata, pinnatim trifoliolata; foliola breviter petiolulata, lanceolato-oblonga vel ovato-oblonga, maxima 5-pollicaria, cætera $1\frac{1}{2}$–3-pollicaria, basi rotundata, sursum gradatim acuminata, apice mucronulata, discoloria, subtus pallidiora, supra glabra, subtus petiolisque primum patentim pilosa, demum fere glabra, petiolo 6–18 lin. longo; stipulæ deciduæ non visæ; stipellæ filiformes, circiter 2 lin. longæ. *Flores* mediocres, racemoso-paniculati; paniculæ semipedales, multifloræ; bracteæ amplæ, pilosæ, acuminatæ, cito deciduæ; pedicelli gemini vel solitarii, filiformes, 1–3 lin. longi; calyx sparse pilosus; ovarium longiuscule stipitatum, puberulum, circiter 7-ovulatum. *Legumen* (maturum non visum) glabrum, sæpe 5–7-articulatum, planum vel leviter spiraliter tortum, circiter pollicare, articulis suborbicularibus.—*D. canadense,* Seem. Bot. Voy. 'Herald,' p. 28, nec DC.

North Mexico, Sierra Madre (*Seemann,* 2184). Hb. Kew.

This species is nearer *D. paniculatum,* DC., than *D. canadense,* DC., to which Seemann had referred it; but the glabrous pod is very different.

44. **Desmodium molle,** DC. Prodr. ii. p. 332.

Central America (*Barclay*); Panama (*Seemann*, 219).—Venezuela to Brazil and in the island of St. Thomas.

45. **Desmodium molliculum,** DC. Prodr. ii. p. 331.

Hedysarum molliculum, H. B. K.

South Mexico, Chapultepec (*Bourgeau*, 333), Zacuapan (*Galeotti*, 3276), common near San Angel (*Schaffner*), Real del Monte (*Coulter*), without locality (*Graham*), Santa Fé, valley of Mexico (*Bourgeau*, 332).—Southward to Peru. Hb. Kew.

46. **Desmodium neo-mexicanum,** A. Gray, Pl. Wright. i. p. 53.

New Mexico.—North Mexico, Santa Cruz, Sonora (*Thurber*), Sonoita (*Wright*).

47. **Desmodium nicaraguense,** Œrst. Leg. Centr. Amer. p. 16.

Guatemala (*Salvin & Godman*; *Friedrichsthal*); Nicaragua, Volcan el Viejo (*Œrsted*). Hb. Kew.

48. **Desmodium** (§ **Chalarium**) **nitidum,** Mart. et Gal. (char. amplif.).

Desmodium nitidum, Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 186.

Suffruticosum, glaberrimum, ramis teretibus striatulis, foliis petiolatis trifoliolatis, foliolis ovato-oblongis obtusis (" ovatis acuminatis " ex Mart. et Gal. loc. cit.) basi subcordatis, floribus parvis numerosissimis laxe racemoso-paniculatis, paniculis terminalibus amplissimis aphyllis, pedicellis elongatis filiformibus patentibus, bracteis bracteolisque lineari-subulatis striatis persistentibus, ovario longiuscule stipitato, legumine juniore 6–8-articulato (" articulis orbiculatis " ex Mart. et Gal. loc. cit.).

Suffrutex vel *herba* sublignosa, perennis, omnino glaberrima et nitida, ramis teretibus striatulis. *Folia* pinnatim trifoliolata, graciliter petiolata; foliola ovato-oblonga (" ovata, acuminata," ex Mart. et Gal. loc. cit.), 1½–2-pollicaria, obtusa, basi subcordata, reticulato-venosa, petiolo gracili; stipulæ oblique ovato-lanceolatæ, longe acuminatæ, falcatæ, 4–5 lineas longæ, persistentes, reflexæ; stipellæ subulatæ. *Flores* parvi, rosei, numerosissimi, laxe racemoso-paniculati; paniculæ terminales, sesquipedales, aphyllæ, ramulis gracilibus; pedicelli solitarii, gemini vel terni, insigniter filiformes, usque 8 lin. longi, patentes; bracteæ bracteolisque lineari-subulatæ, striatæ, persistentes, pedicellis triplo quadruplove breviores; calycis lobi tubo æquilongi; ovarium stipitatum, 6–8-ovulatum. *Legumen* valde immaturum rectum, 6–8-articulatum (" leguminis stipitati articulis orbiculatis," Mart. et Gal. loc. cit.).

South Mexico, Cordillera of Oaxaca, near Jolotepeque, at 6500 feet, and Yavezia at 7000–8000 feet (*Galeotti*, 3160). Hb. Kew.

We have described this species more in detail in order to distinguish it from our closely allied *D. foliosum*, from which it differs in its leaflets being somewhat cordate at the base, in its ample leafless panicle of flowers, in its relatively long and remarkably slender spreading pedicels, and in the orbicular joints of its pods. We have seen only one good flowering specimen with two or three leaves attached to it.

49. **Desmodium orbiculare,** Schl. in Linnæa, xii. p. 311.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 177);

South Mexico, Vera Cruz to Orizaba (*Müller*, 1691, 1749), near Guanaxuato (*Hartweg*, 1598), Zimapan (*Coulter*), Tlacolola, Oaxaca (*Andrieux*, 455), Orizaba (*Botteri*; *Jurgensen*, 706). Hb. Kew.

50. **Desmodium** (§ **Heteroloma**) **orizabanum,** Hemsl. Diag. Pl. Nov. pars 3, p. 45.

Suffruticosum, nanum, fere omnino glaberrimum, ramis erectis vel adscendentibus teretibus graciliusculis, foliis trifoliolatis longiuscule petiolatis nitidis, foliolis approximatis ovatis usque lanceolato-oblongis obtusiusculis, floribus mediocribus laxe racemosis, racemis simplicibus vel ramosis, bracteis puberulis lanceolatis acuminatis striatis ante anthesin deciduis, pedicellis sæpe geminis filiformibus, legumine uncinato-hispidulo sæpissime 4- vel 5-articulato leviter curvato, articulis dolabriformibus.

Suffrutex pedalis vel sesquipedalis, fere omnino glaberrimus, ramis erectis vel adscendentibus, teretibus, graciliusculis. *Folia* longiuscule petiolata, membranacea, nitida, pinnatim trifoliolata; foliola approximata, ovata, lanceolata vel fere oblonga, 6–24 lin. longa, obtusa, lateralia sæpe minora, omnia petiolulata, petiolulis brevibus, supra uncinato-barbulatis; petioli gracilis basi tumida, parte sub foliolis 9–18 lin. longa; stipulæ et stipellæ subulatæ, valde deciduæ. *Flores* rosei, mediocres, laxe racemosi; racemi simplices vel ramosi, 6–12-pollicares, ramulis gracilibus; bracteæ puberulæ, lanceolatæ, acuminatæ, striatæ, ante anthesin deciduæ, ad 2 lin. longæ; pedicelli sæpe gemini, filiformes, usque 6 lin. longi; calyx glaber, lobis ovatis obtusiusculis; ovarium breviter stipitatum, albo-hispidulum. *Legumen* uncinato-hispidulum, sæpissime 4- vel 5-articulatum, leviter curvatum, 1–1½ poll. longum, articulis dolabriformibus.

South Mexico, region of Orizaba, Rio Blanco (*Bourgeau*, 2997), Cordillera of Vera Cruz, woods at 3000 feet (*Galeotti*, 3296), Orizaba (*Botteri*, 730). Hb. Kew.

A distinct species, glabrous and naked, with the exception of the barbed pod. The terminal leaflet is relatively close to the pair below it.

51. **Desmodium** (§ **Chalarium**) **palmeri,** Hemsl. Diag. Pl. Nov. pars 3, p. 45.

Fruticosum vel herbaceum, caulibus graciliusculis adscendentibus infra dense foliosis, foliis trifoliolatis, foliolis lanceolato-oblongis glaucis utrinque præcipue subtus appresse setulosis, floribus mediocribus laxe racemosis, racemis simplicibus paucifloris longe pedunculatis, pedunculis gracilibus, pedicellis geminis gracilibus, calycis sparsim pilosi lobis inæqualibus, legumine flavescente uncinato-puberulo sæpe 4-articulato, articulis oblique ovatis.

Herba vel *suffrutex*, ramis vel caulibus graciliusculis adscendentibus (racemis inclusis sesquipoll. longis), tenuiter puberulis, demum glabris, fusco-purpureis, infra dense foliosis, internodiis circiter semipollicaribus. *Folia* graciliter breviterque petiolata, pinnatim trifoliolata; foliola (in spec. nostr. complicata et deflexa) brevissime et crassiuscule petiolulata, lanceolato-oblonga, 9–18 lin. longa, approximata, apice apiculata, basi obtusa, utrinque sed præcipue subtus appresse setulosa, setulis albis, sparsis; petioli gracilis parte sub foliolis 3–4 lin. longa; stipulæ fuscæ, lanceolato-subulatæ, deflexæ, circiter 3 lin. longæ, persistentes; stipellæ longiusculæ, setulosæ. *Flores* mediocres, laxe racemosi; racemi simplices, terminales, pauciflori, longe graciliterque pedunculati, cum pedunculis 8–9-pollicares, pedicellis geminis gracilibus, circiter semipollicaribus; bracteæ deciduæ non visæ; calyx sparsim pilosus, lobis inæqualibus. *Legumen* flavescens, uncinato-puberulum, scabriusculum, sæpe 4-articulatum, vix pollicare, articulis oblique ovatis.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 179). Hb. Kew.

52. **Desmodium paniculatum,** DC. Prodr. ii. p. 329.

MASSACHUSETTS and eastern States southward to FLORIDA and TEXAS.—NORTH MEXICO?

53. **Desmodium** (§ **Chalarium**) **parkinsoni,** Hemsl. Diag. Pl. Nov. pars 3, p. 45.

Fruticosum, ramis teretibus junioribus pilosis, foliis trifoliolatis, foliolis ovato-oblongis vel ellipticis utrinque strigilloso-pilosis, venis lateralibus primariis contiguis præcipue subtus prominentibus, floribus mediocribus racemosis, racemis densis quam folia brevioribus bracteatis, bracteis amplis ante anthesin deciduis, calyce glabro vel sparsissime piloso, lobo inferiore angustiore longiore, ovario longe stipitato glaberrimo 6-ovulato.

Frutex, ramis teretibus, junioribus albo-sericeo-pilosis, demum glabris, fusco-purpureis, internodiis quam folia brevioribus. *Folia* petiolata, pinnatim trifoliolata; foliola crassiuscule petiolulata, subcoriacea, ovato-oblonga vel fere elliptica, 1–2½ poll. longa, basi late rotundata, apice obtusa vel apiculata, utrinque strigilloso-pilosa, venis primariis lateralibus contiguis, subtus elevatis, fulvo-pilosis; petioli pilosi parte sub foliolis circiter semipollicari; stipulæ valde deciduæ non visæ; stipellæ longiusculæ, subulatæ, fuscæ, etiam deciduæ. *Flores* mediocres, racemosi; racemi densi, foliis breviores, bracteati; bracteæ amplæ, fuscæ, striatæ, glabrescentes, acuminatæ, alabastra involventes, ante anthesin deciduæ; pedicelli puberuli, 1–2 lin. longi; calyx glaber vel sparsissime pilosus, lobis inæqualibus; ovarium longe stipitatum, glaberrimum, 6-ovulatum. *Legumen* glabrum (juvencum tantum visum), sutura utraque sinuata.

SOUTH MEXICO, without locality (*Parkinson*). Hb. Kew.

This was intermixed with *D. strobilaceum*, Schl., and *D. densiflorum*, nobis; but it is quite distinct in foliage, bracts, and ovary. We have not seen mature pods.

54. **Desmodium** (§ **Chalarium**) **parryi,** Hemsl. Diag. Pl. Nov. pars 3, p. 46.

Herbaceum, ramis gracillimis fere filiformibus, foliis parvis trifoliolatis, foliolis ovatis vel oblongis parce pilosis, floribus parvis laxe racemosis, racemis pedunculatis usque pedalibus, bracteis deciduis, calycis parce pilosi lobis lineari-subulatis quam tubus longioribus, legumine flavescente uncinato-puberulo sæpissime 4–5-articulato, articulis ellipticis atro-venosis.

Herba (annua?) ramosa, ramis gracillimis, fere filiformibus adscendentibus, primum leviter puberulis, demum glabris, 12–18 poll. longis. *Folia* petiolata, pinnatim trifoliolata; foliola brevissime petiolulata, membranacea, ovata vel oblonga, rarissime fere elliptica, 6–12 lin. longa, basi rotundata, apice obtusa vel apiculata, utrinque parce pilosa, petiolo vix semipollicari; stipulæ lineari-subulatæ, circiter 2 lin. longæ, fuscæ, striatæ, deciduæ; stipellæ breves, subulatæ. *Flores* parvi, laxe racemosi; racemi pauciflori, longe pedunculati, cum pedunculis usque pedales; bracteæ deciduæ non visæ; pedicelli filiformes, sæpissime gemini, 6–9 lin. longi; calycis parce pilosi lobi lineari-subulati, tubo longiores. *Legumen* flavescens, atro-venosum, uncinato-puberulum, fere sessile, circiter pollicare, sæpissime 4–5-articulatum, articulis ellipticis, leviter obliquis.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 178). Hb. Kew.

This and our *D. leptoclados* have exceedingly slender branches, and in many other characters closely resemble each other; but the pods are very different.

55. **Desmodium parviflorum,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 185.

SOUTH MEXICO, dunes of Vera Cruz (*Galeotti*, 3337).

56. **Desmodium (§ Chalarium) plectocarpum,** Hemsl. Diag. Pl. Nov. pars 3, p. 46.

Herbaceum, robustum, caulibus crassis tenuiter uncinato-puberulis, foliis trifoliolatis, foliolis ellipticis vel orbicularibus utrinque appresse molliterque hirsutis, floribus parvis numerosissimis racemoso-paniculatis, paniculis terminalibus amplissimis, pedicellis brevibus sæpissime geminis vel ternis, bracteis parvis mox deciduis, calyce uncinato-hirsuto, legumine uncinato-hirsuto sæpissime 6-articulato, articulis suborbicularibus sibi invicem replicatis, seminibus oblongis parvis fuscis nitidis.

Herba robusta, pluripedalis, caulibus erectis, crassis, obscure striatis, tenuiter uncinato-puberulis (pilis flavescentibus), intus medullosis. *Folia* petiolata, pinnatim trifoliolata; foliola breviter petiolulata, crassiuscula, elliptica, usque orbicularia, 1½–2½ poll. longa, utrinque appresse molliterque hirsuta, pilis densis, rectis, albo-fulvidis, petiolo pollicari vel breviore; stipulæ amplæ, reflexæ; stipellæ parvæ, subulatæ. *Flores* viridi-purpurei, parvi, numerosissimi, breviter pedicellati, racemoso-paniculati; paniculæ terminales, valde ramosæ, pedales et ultra; pedicelli 1–3 lin. longi, sæpissime gemini vel terni; bracteæ parvæ, lineari-subulatæ, mox deciduæ; calyx uncinato-hirsutus. *Legumen* uncinato-hirsutum (pilis flavescentibus), vix semipollicare, sæpissime 6-articulatum, articulis suborbicularibus, more *Urariæ hamosæ* sibi invicem replicatis; semina oblonga, circiter lineam longa, fusca, nitida.

South Mexico, Orizaba (*Botteri*, 699; *Bourgeau*, 3177). Hb. Kew.

In foliage and fruit this bears a striking resemblance to the Asiatic *Uraria hamosa*, Wall., though it has not the hooked pedicels of that plant. *Uraria hamosa* would perhaps be better associated with our plant than placed in the genus *Uraria*.

57. **Desmodium plicatum,** Schl. et Ch. in Linnæa, v. p. 585.

North Mexico, Sierra Madre (*Seemann*, 2181); South Mexico, Acapulco (*Hinds*), Tampico (*Beechey*), Vera Cruz to Orizaba (*Müller*, 619; *Botteri*, 1749), Mirador (*Linden*, 714), savannas at 3000 feet in the Cordillera of Vera Cruz (*Galeotti*, 3279; *Jurgensen*, 434), valley of Mexico (*Bourgeau*, 1714), valley of Cordova (*Bourgeau*, 1864), Orizaba (*Sumichrast*, 1749), between Misantla and Colipa (*Schiede & Deppe*). Hb. Kew.

58. **Desmodium podocarpum,** Hook. et Arn. Bot. Beech. Voy. p. 417, t. 96.

South Mexico, Acapulco (*Beechey*).

59. **Desmodium polystachyum,** Schl. in Linnæa, xii. p. 321.

South Mexico, Hacienda de la Orduna (*Schiede*).

60. **Desmodium prehensile,** Schl. in Linnæa, xii. p. 315.

South Mexico, savannas at 3000 feet in the Cordillera of Vera Cruz (*Galeotti*, 3305, 3314), Mirador (*Linden*, 703), Orizaba (*Botteri*, 733).

There are two distinct species in the Kew Herbarium under this name, neither of which agrees very well with Schlechtendal's description.

61. **Desmodium psilocarpum,** A. Gray, Pl. Wright. ii. p. 48.

New Mexico.—North Mexico, Santa Cruz, Sonora (*Wright*); South Mexico, Mirador (*Linden*, 719). Hb. Kew.

62. **Desmodium psilophyllum,** Schl. in Linnæa, xii. p. 310.

South Mexico, Cuesta Grande de Chiconquiaco (*Schiede*), region of Orizaba (*Bourgeau*, 2922). Hb. Kew.

We have not seen authentically named specimens of this species; and Bourgeau's specimens we have determined from Schlechtendal's description. It may be the same as De Candolle's *D. linearifolium*, imperfectly described in the 'Prodromus.' It differs from the plant named *D. angustifolium*, DC., in the Kew Herbarium (to which, however, it is closely related), in the primary lateral veins being broadly curved instead of being straight and forming very acute angles with the midrib, also in the pod usually having four or five joints instead of six or seven.

63. **Desmodium retinens,** Schl. in Linnæa, xii. p. 311.

South Mexico, Regla (*Ehrenberg*).

64. **Desmodium salvinii,** Hemsl. Diag. Pl. Nov. pars 3, p. 46.

Fruticosum, ramis graciliusculis creberrime lenticellatis, internodiis brevissimis, foliis parvis trifoliolatis, foliolis ovato-oblongis vel ellipticis apiculatis utrinque leviter pilosulis, floribus mediocribus densiuscule racemosis, racemis terminalibus et paniculatis vel axillaribus et simplicibus brevibus fere sessilibus, ovario puberulo 4-ovulato, legumine immaturo puberulo sæpissime 4-articulato, suturis fere æqualiter sinuatis.

Frutex, ramis graciliusculis, minute puberulis, striatis, fuscis, creberrime lenticellatis, lenticellis pallidioribus, internodiis brevissimis. *Folia* petiolata, pinnatim trifoliolata; foliola longiuscule petiolulata, membranacea, ovato-oblonga vel elliptica, 9–15 lin. longa, basi rotundata, apice sæpissime apiculata, utrinque leviter pilosula, subtus pallidiora, petiolo fere filiformi quam foliola breviore; stipulæ lineari-subulatæ, circiter 2 lineas longæ. *Flores* mediocres, densiuscule racemosi; racemi breves, fere sessiles, aut terminales et paniculati, aut axillares et simplices, 2–3-pollicares; pedicelli filiformes, 2–3 lin. longi; calycis colorati glabrescentis lobi inæquales, patentes; ovarium stipitatum, puberulum, 4-ovulatum. *Legumen* (juniora tantum visa) longiuscule stipitatum, puberulum (pilis rectis), sæpissime 4-articulatum, circiter 9 lin. longum, suturis fere æqualiter sinuatis.

Guatemala, Volcan de Fuego, 3800 feet (*Salvin*). Hb. Kew.

A distinct shrubby species.

65. **Desmodium scorpiurus,** Desv. Journ. Bot. iii. p. 122.

South Mexico, Jalisco (*Beechey*), valley of Cordova (*Bourgeau*, 2297); Guatemala (*Friedrichsthal*); Costa Rica, Cartago (*Œrsted*); Panama, Empire railway-station (*S. Hayes*, 504).—Southward to Peru, and in the West Indies. Hb. Kew.

66. **Desmodium (§ Heteroloma) scutatum,** Hemsl.

Fruticosum, volubile, ramis teretibus elongatis uncinato-hirsutis, foliis trifoliolatis dense molliterque strigillosis vel fere sericeis lanceolatis ovatisve supra secus costam sæpissime albo-lineatis, floribus mediocribus numerosissimis racemoso-paniculatis, bracteis valde caducis, ovario hirsuto biovulato, legumine latissimo puberulo sæpe biarticulato, articulis fere disjunctis suborbicularibus basi subcordatis margine fulvo-ciliatis.

Frutex vel *suffrutex* volubilis, omnino plus minusve hirsutus, vix scabriusculus, ramis teretibus, elongatis, graciliusculis, fulvo uncinato-hispidulis. *Folia* petiolata, pinnatim trifoliolata; foliola

breviter petiolulata, membranacea, ovata vel lanceolata, 1–5-pollicaria (lateralia sæpissime triente, interdum fere dimidio minora), basi rotundata, apice aristata, utrinque dense molliterque strigillosa vel fere sericea, juniora subtus inter nervos argentea, secus costam nervos marginemque fulva, supra secus costam sæpissime albo-lineata, petiolo gracili subtereti ½–2½-pollicari; stipulæ lanceolatæ, acutæ, striatæ, circiter 5 lin. longæ, valde deciduæ; stipellæ subulatæ, 2–3 lin. longæ, persistentes. *Flores* mediocres (4–5 lineas longi), purpureo-violacei vel fere coccinei, numerosissimi, racemoso-paniculati; racemi laxi, ramulis gracillimis; pedicelli 2–3 lin. longi, filiformes, solitarii, gemini vel interdum terni; calyx fulvo-pilosus, lobis acuminatis; ovarium hirsutum, biovulatum. *Legumen* subsessile, latissimum, puberulum, subplanum, reticulato-venosum, sæpe biarticulatum, articulis fere disjunctis, suborbicularibus vel orbiculari-reniformibus, 1–1½ poll. diametro, basi subcordatis, margine dense fulvo ciliatis.—*Rhynchosia? albo-nitens*, Lemaire, Ill. Hort. 1861, t. 290; *Desmodium skinneri* var. *albo-lineatum* et *D. skinneri* var. β. *albo-nitens*, Hook. Bot: Mag. t. 5452, nec *D. skinneri*, Benth., infra descriptum.

South Mexico, introduced into European gardens (*Ghiesbreght*). Hb. Kew.

A very distinct species, easily distinguished by its very broad, two-jointed pod, the joints of which are fringed on the margin and exceed an inch in diameter. We have seen no wild specimens.

67. **Desmodium sericocarpum,** Hemsl. Diag. Pl. Nov. pars 3, p. 47.

Fruticosum, ramosum, ramis junioribus tomentosis, foliis majusculis trifoliolatis, foliolis oblongis ellipticisve utrinque molliter tomentosis, supra flavescentibus, subtus albidis, floribus mediocribus densiuscule racemosis, racemis brevibus lateralibus, bracteis lineari-subulatis, calycis hirsuti lobis latis obtusiusculis, ovario puberulo 5–6-ovulato, legumine juniore valde sericeo-tomentoso.

Frutex vel *suffrutex* ramosus, ramis teretibus, junioribus albo- vel flavo-tomentosis. *Folia* petiolata, pinnatim trifoliolata; foliola petiolulata, crassiuscula, oblonga vel elliptica (lateralia basi subobliqua), 1–2 poll. longa, maxima 1½ poll. lata, apice apiculata, utrinque dense molliterque tomentosa, supra flavescentia, subtus albida; petiolus crassiusculus, usque pollicaris; stipulæ lineari-acuminatæ, circiter 3 lin. longæ; stipellæ subulatæ, 2–3 lin. longæ. *Flores* mediocres, racemosi, racemis densiusculis, breviter pedunculatis, axillaribus, 3–5 poll. longis; pedicelli 1½–3 lin. longi; bracteæ lineari-subulatæ, alabastro longiores, ante anthesin deciduæ; calyx hirsutus, lobis latis obtusiusculis; ovarium puberulum, 5–6-ovulatum. *Legumen* immaturum valde sericeo-tomentosum.

South Mexico, Wartenberg, near Tantoyuca, Huasteca (*Ervendberg*, 299). Hb. Kew.

68. **Desmodium sericophyllum,** Schl. in Linnæa, xii. p. 317.

Mexico, ? Vera Cruz to Orizaba (*Müller*, 1658), San Andres and Hacienda de la Laguna (*Schiede*); Nicaragua, Segovia (*Ærsted*).—Venezuela. Hb. Kew.

69. **Desmodium serotinum,** DC. Prodr. ii. p. 338.

South Mexico, Jalapa (*Schiede*).

The native country of the typical plant was unknown to De Candolle.

70. **Desmodium** (§ **Heteroloma**) **skinneri,** Benth. MSS. in Hb. Kew, et in Hemsl. Diag. Pl. Nov. pars 3, p. 47, nec Bot. Mag. t. 5452.

Suffruticosum, ramis junioribus hirsutis, foliis trifoliolatis longiuscule petiolatis, foliolis oblique

ovatis obtusissimis supra parce hispidulis, subtus dense appresse pilosis, floribus racemoso-paniculatis, ovario triovulato, legumine glabrescente 2-articulato 3-articulato vel interdum haud articulato, articulis fere disjunctis planis tenuibus subreniformibus.

Suffrutex vel *frutex*, ramis graciliusculis, striatulis, junioribus tantum albo- vel fulvo-hirsutis, internodiis brevibus. *Folia* petiolata, pinnatim trifoliolata; foliola longiuscule petiolulata, membranacea, ovata vel fere oblonga, 2–3-pollicaria, basi leviter obliqua, apice obtusissima, fere rotundata, supra præcipue in venis parce hispidula, subtus dense appresse pilosa; petiolus totus 1½–2-pollicaris, parte sub foliolis 9–15 lin. longa; stipulæ deciduæ a nobis non visæ; stipellæ parvæ, subulatæ. *Flores* parvi, numerosissimi, densiuscule racemoso-paniculati, breviter graciliterque pedicellati, singuli, gemini vel terni, bracteati; bracteæ minutæ, lanceolatæ, acuminatæ, valde deciduæ; calyx hirsutus, lobis fere æqualibus, vix acutis, dorsalibus fere ad apicem connatis; ovarium pubescens, triovulatum. *Legumen* primum hirsutum, demum glabrescens (maturum non visum), planum, stylo indurato filiformi longiusculo coronatum, sæpissime 2- vel 3-articulatum, rarissime haud articulatum, articulis fere disjunctis, subreniformibus, semimaturis circiter sesquipollicaribus.

GUATEMALA, without locality (*Skinner*, 37). Hb. Kew.

This plant was confounded (Bot. Mag. t. 5452) with the flowering state of our *D. scutatum*, from which it differs in its very obtuse leaflets, and especially in the size and shape of the legume.

71. **Desmodium sonoræ,** A. Gray, Pl. Wright. ii. p. 47.

NORTH MEXICO, low valley on the Sonoito, near the deserted rancho (*Wright*). Hb. Kew.

72. **Desmodium spirale,** DC. Prodr. ii. p. 333.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 181); SOUTH MEXICO, Orizaba (*Botteri*, 739), Zimapan (*Coulter*), common about Tacubaya (*Schaffner*), valley of Mexico (*Bourgeau*, 769 and 934); NICARAGUA, Volcan el Viejo (*Œrsted*); COSTA RICA, Agua Caliente (*Œrsted*); PANAMA (*S. Hayes*, 552).—Common in the WEST INDIES and Tropical SOUTH AMERICA, and in Tropical ASIA and AFRICA. Hb. Kew.

73. **Desmodium stipulaceum,** DC. Prodr. ii. p. 330; Calques des Dess. Fl. Mex. 269.

MEXICO (*Moçino & Sessé*); CENTRAL AMERICA (*Œrsted*). Hb. Kew.

74. **Desmodium strictum,** DC. Prodr. ii. p. 329.

NEW JERSEY southward to FLORIDA and TEXAS, and collected by the botanists of the Mexican Boundary Expedition; but whether in Mexico or not is uncertain.

75. **Desmodium strobilaceum,** Schl. in Linnæa, xii. p. 316.

SOUTH MEXICO, Zacuapan, at 3000 feet (*Galeotti*, 3262), Mirador (*Linden*, 704), Orizaba (*Botteri*, 735; *Müller*, 604). Hb. Kew.

76. **Desmodium subsessile,** Schl. in Linnæa, xii. p. 319.

SOUTH MEXICO, Regla (*Ehrenberg*).

77. **Desmodium (§ Chalarium) subtile,** Hemsl. Diag. Pl. Nov. pars 3, p. 47.

Herbaceum, erectum, sparse pilosum, caulibus angulatis, foliis longe graciliterque petiolatis trifoliolatis, foliolis ellipticis oblongisve tenuissimis subtilissime reticulato-venosis pallidis, stipulis parvis reflexis persistentibus, floribus mediocribus racemoso-paniculatis, paniculis parvis, bracteis deciduis, pedicellis sæpissime geminis gracilibus, legumine longiuscule stipitato uncinato-puberulo sæpe 6-articulato, articulis subquadratis nigriveniis.

Herba erecta, ultra bipedalis, caulibus subsimplicibus, parce uncinato-puberulis vel pilosulis, angulatis. *Folia* longe graciliterque petiolata, pinnatim trifoliolata; foliola approximata, tenuissima, subtilissime reticulato-venosa, late elliptica usque oblonga, rarius ovato-oblonga, 1½–2 poll. longa, sæpissime utrinque rotundata, interdum apice apiculata, parce pilosula (pilis albis basi tuberculatis), simul supra minutissime puberula, petioli parte sub foliolis circiter bipollicari; stipulæ lineari-subulatæ, fuscæ, reflexæ, 2½–3 lin. longæ, persistentes; stipellæ minutæ, subulatæ. *Flores* mediocres, purpurei, racemoso-paniculati; paniculæ terminales vel axillares, parvæ, pauciforæ, pedicellis sæpissime geminis, gracilibus, vix semipollicaribus; bracteæ stipulis simillimæ, deciduæ; calyx apertus, lobo inferiore longiore parce albo-setuloso. *Legumen* longiuscule stipitatum, uncinato-puberulum, vix pollicare, sæpe 6-articulatum, articulis subquadratis, nigriveniis.

South Mexico, Desierto Viejo, valley of Mexico (*Bourgeau*, 777). Hb. Kew.

With very much the general aspect of *D. dillenii*, Darl., this plant has a very different calyx and pod.

78. **Desmodium tortuosum,** DC. Prodr. ii. p. 332; Sloane, Hist. Jamaica, i. t. 116. fig. *g*. =*D. stipulaceum*, DC.?

Florida.—Nicaragua, near Granada (*Œrsted*), Realejo (*Sinclair*); Panama, Isle of Taboga (*Hinds*).—North part of South America, and general in the West Indies.

79. **Desmodium triflorum,** DC. Prodr. ii. p. 334.

Sagotia triflora, Duchass. et Walp.

South Mexico, Orizaba (*Botteri*, 687, 692), Jalisco (*Beechey*), Acapulco (*Sinclair*), valley of Cordova (*Bourgeau*, 2288); Guatemala (*Wendland*); Nicaragua, Granada (*Œrsted*); Costa Rica, Aguacate (*Œrsted*); Panama, Chagres (*Fendler*, 84).—Southward to Brazil, and in the West Indies. Perhaps introduced into America. Almost cosmopolitan in the Tropics. Hb. Kew.

80. **Desmodium uncinatum,** DC. Prodr. ii. p. 331; Jacq. Hort. Schœnb. iii. t. 298.

Desmodium sinclairi, Benth. Bot. Voy. Sulph. p. 82.
Desmodium aparines, DC.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 181½); South Mexico, Zimapan and Real del Monte (*Coulter*), valley of Mexico (*Bourgeau*, 733), valley of Cordova (*Bourgeau*, 1858, 1859), Orizaba (*Botteri*, 732, 734); ? Guatemala, Volcan de Fuego, at 5000 feet (*Salvin*); Costa Rica, between Aguacate and San José (*Œrsted*); Panama, Chagres (*Fendler*).—West Indies, and Eastern Tropical America to South Brazil. Hb. Kew.

81. **Desmodium (Nicolsonia) venustulum,** DC. Prodr. ii. p. 325.

Panama (*Duchassaing*).—Peru.

82. **Desmodium (Nicolsonia) villosum,** Schl. et Ch. in Linnæa, v. p. 584.
MEXICO (*Schiede & Deppe*).

83. **Desmodium viridiflorum,** Beck, Bot. p. 83; Walp. Rep. i. p. 740.
PENNSYLVANIA southwards through the Eastern States of North America to FLORIDA; TEXAS.—NORTH MEXICO, near Monterey (*Edwards*). Hb. Kew.

84. **Desmodium wislizeni,** Engelm. in A. Gray, Pl. Wright. i. p. 53, in adnot.
NORTH MEXICO, Cosiquiriachi (*Wislizenus*).

85. **Desmodium,** sp.
GUATEMALA (*Skinner*, 27). Hb. Kew.
A distinct species; but the specimen is insufficient for description.

86. **Desmodium,** sp.
SOUTH MEXICO, Orizaba (*Botteri*, 687). Hb. Kew.

87. **Desmodium,** sp.
SOUTH MEXICO, Oaxaca (*Ghiesbreght*). Hb. Kew.

88. **Desmodium,** sp.
SOUTH MEXICO, Chiapas &c. (*Ghiesbreght*, 588). Hb. Kew.

42. LESPEDEZA.

Lespedeza, Michx. Fl. Bor.-Am. ii. p. 70; Benth. et Hook. Gen. Plant. i. p. 524.

About twenty-five herbaceous and shrubby species, growing in North America, Temperate Asia, chiefly Eastern, in the mountains of Tropical Asia, and in Australia.

1. **Lespedeza stuvei,** Nutt. in Torr. & Gray, Fl. N. Am. i. p. 367.
A very common plant from PENNSYLVANIA southwards through the Eastern States of North America to LOUISIANA and TEXAS.—NORTH MEXICO?

Tribe VICIEÆ.

This tribe consists of six genera of herbaceous plants, generally dispersed in temperate and subtropical regions.

43. VICIA.

Vicia, Linn. Gen. Plant. n. 873; Benth. et Hook. Gen. Plant. i. p. 524.

Upwards of 100 species of annual and perennial herbs, dispersed all over the temperate regions of the northern hemisphere and in South America. Some species are common weeds of cultivation, and naturalized in many countries.

1. **Vicia exigua,** Nutt. in Torr. & Gray, Fl. N. Am. i. p. 272.

NEW MEXICO; CALIFORNIA.—NORTH MEXICO, Chihuahua, on the banks of Lake Santa Maria (*Wright*).

2. **Vicia humilis,** H. B. K. Nov. Gen. et Sp. vi. p. 498, t. 581.

SOUTH MEXICO, near Morea (*Humboldt & Bonpland*), Zimapan (*Coulter*, 583), Orizaba (*Botteri*, 695), in thickets near Jalapa (*Schiede*). Hb. Kew.

3. **Vicia mexicana,** Hemsl. Diag. Pl. Nov. pars 3, p. 47.

Glabrescens et demum glaberrima, ramis crassiusculis adscendentibus angulatis, foliis ampliusculis sessilibus, foliolis 14–18 petiolulatis linearibus 1–1¾ poll. longis apiculatis subtrinerviis, stipulis semisagittatis, pedunculis 15–20-floris quam folia longioribus, floribus ad apices pedunculorum confertis brevissime pedicellatis circiter 8–9 lin. longis, calyce parcissime puberulo basi postice saccato, ovario longe stipitato circiter 10-ovulato, stylo sursum hirsuto.

Herba annua vel perennis, ramosa, ramis crassiusculis, adscendentibus angulatis, cito glaberrimis et nitidis, usque bipedalibus et forsan ultra, internodiis brevibus. *Folia* sessilia, sine cirro 4–5-pollicaria, cito glaberrima et nitida; foliola 14–18, breviter petiolulata, sæpissime alterna, linearia, sæpe 1–1½ poll. longa, interdum fere 2 poll. longa, apiculata, subtrinervia; cirro breviusculo, sæpissime alte bifido; stipulæ angustæ, semisagittatæ, acutissimæ, usque semipollicares. *Flores* circiter 8–9 lin. longi, brevissime pedicellati, dense racemosi; racemi 15–20-flori, longe pedunculati, cum pedunculo usque semipedales; calyx parcissime puberulus, 10-nervius, inæqualiter bilabiatus, labium superius breve, bilobum, lobis latis, fere rotundatis, labium inferum trilobatum, lobis lanceolatis, acutis, antico paulo longiore; vexillum ellipticum; alæ longe unguiculatæ, semicordatæ, vexillo paulo breviores; carina longe unguiculata, cucullata, alis paulo brevior; ovarium longe stipitatum, glabrum, circiter 10-ovulatum, stylo superne hirsuto. *Legumen* ignotum.

SOUTH MEXICO, Oaxaca (*Ghiesbreght*). Hb. Kew.

This is closely allied to *V. pulchella*, H. B. K.; but it is glabrous, except the youngest tips of the branches; and it is larger in all its parts, the flowers being nearly three times as large. The ovary, too, is borne on a much longer stalk.

4. **Vicia pedunculata,** Peyr. in Linnæa, xxx. p. 80.

SOUTH MEXICO, Toluca, Cocustepec at 8800 feet (*Heller*, 374).

5. **Vicia pulchella,** H. B. K. Nov. Gen. et Sp. vi. p. 499, t. 583.

TEXAS; NEW MEXICO; ARIZONA.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 198); SOUTH MEXICO, near Mescala, 1600 feet (*Humboldt & Bonpland*), Zimapan (*Coulter*), woods at 8000 feet, Oaxaca (*Galeotti*, 3205). Hb. Kew.

Var.? foliis majoribus etc.

NORTH MEXICO, San Antonio de las Alanzanes (*Gregg*). Hb. Kew.

6. **Vicia setifolia,** H. B. K. Nov. Gen. et Sp. vi. p. 500.

SOUTH MEXICO, near the city of Mexico (*Humboldt & Bonpland*).—Southward to PERU.

7. **Vicia sativa,** Linn. Sp. Pl. p. 1037.

SOUTH MEXICO, Orizaba (*Botteri*, 696). Hb. Kew.

This plant has a very wide range of distribution in temperate and warm regions in the northern hemisphere, including North America, though it may have been introduced into the locality given above.

44. LATHYRUS.

Lathyrus, Linn. Gen. Plant. n. 872; Benth. et Hook. Gen. Plant. i. p. 526.

About 100 herbaceous species, generally dispersed in the temperate and subtropical regions of the northern hemisphere; a few species are indigenous in South America.

1. **Lathyrus mexicanus,** Schl. in Linnæa, xii. Litbl. p. 85.

SOUTH MEXICO, valley of Mexico (*Bourgeau*, 85). Hb. Kew.

This is probably *L. tingitanus*, Linn., an Old-world species, now widely diffused as an escape from cultivation.

2. **Lathyrus palustris,** Linn. Sp. Pl. p. 1034.

Widely dispersed in EUROPE, NORTH ASIA, and NORTH AMERICA.

Var. ? foliis elongatis angustis etc. (Gray, Pl. Wright. ii. p. 32).

NORTH MEXICO, Cohahuila and Sonora.

3. **Lathyrus polymorphus,** Nutt. Gen. ii. p. 97.

MISSOURI &c. southward.—NORTH MEXICO, in wet places, Sonora (*Thurber*), along the streams between the San Pedro and Santa Cruz, Sonora (*Wright*).

4. **Lathyrus venosus,** Muhl. in Willd. Sp. Pl. iii. p. 1092; Torr. & Gr. Fl. N. Am. i. p. 274 ?

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 197); SOUTH MEXICO, without localities (*Jurgensen*, 817; *Coulter*). Hb. Kew.

L. venosus is a very widely dispersed species in North America, from which the Mexican plant may be specifically different.

Tribe PHASEOLEÆ.

Upwards of fifty genera. A large proportion of the species are twining herbs; and very few are trees. They are mostly natives of warm countries.

45. CENTROSEMA.

Centrosema, DC. Prodr. ii. p. 234; Benth. et Hook. Gen. Plant i. p. 527.

About twenty-five herbaceous or somewhat woody species, natives of South and Central America. One is also widely dispersed in North America, occurs in West Tropical Africa, and is naturalized in Java.

1. **Centrosema angustifolium,** Benth. in Ann. Wien. Mus. ii. p. 117.

Panama, Isle of Tabogo (*Sinclair*), in stony places (*Seemann*, 206).—Colombia, Venezuela, and the West Indies. Hb. Kew.

2. **Centrosema dubium,** Benth. in Benth. et Hook. Gen. Plant. i. p. 528.

Rudolphia dubia, H. B. K. Nov. Gen. et Sp. vi. p. 432, t. 591.

South Mexico, Barranca de Tioselo, Hacienda de la Laguna (*Schiede*).—Colombia.

3. **Centrosema pascuorum,** Mart. ex Benth. in Ann. Wien. Mus. ii. p. 119.

The typical plant is found in the West Indies and Tropical South America.

Var. **brevifolia.**

Costa Rica (*Ærsted*). Hb. Kew.

Grisebach regards *C. pascuorum* as a variety of *C. virginianum*.

4. **Centrosema plumieri,** Benth. Ann. Wien. Mus. ii. p. 117.

South Mexico, Hacienda de la Laguna (*Schiede & Deppe*), valley of Cordova (*Bourgeau*, 1672); Honduras, Tigre Island, Gulf of Fonseca (*Sinclair*); Nicaragua, Realejo and Granada (*Ærsted*); Costa Rica (*Ærsted*); Panama, Isle of Taboga (*Sinclair*), Paraiso railway-station (*S. Hayes*, 444).—West Indies and Tropical South America. Hb. Kew.

5. **Centrosema pubescens,** Benth. in Ann. Wien. Mus. ii. p. 119.

Centrosema molle, Mart.

Centrosema salzmannii, Benth.

South Mexico, Vera Cruz (*Galeotti*, 3284; *Linden*, 693), Orizaba (*Botteri*, 729; *Bourgeau*, 3181), valley of Mexico (*Bourgeau*, 328), Yucatan and Tabasco (*Johnson*, 42); Guatemala (*Friedrichsthal*); Nicaragua, Gulf of Fonseca (*Sinclair*), Realejo (*Ærsted*); Costa Rica, Cartago (*Ærsted*); Panama, Paraiso railway-station (*S. Hayes*, 525), Chagres (*Fendler*, 70).—West Indies and Tropical South America. Hb. Kew.

6. **Centrosema virginianum,** Benth. in Ann. Wien. Mus. ii. p. 120.

Clitoria virginiana, Linn.

In the Eastern States of North America from Maryland to Florida.—South Mexico near Tantoyuca (*Ervendberg*).—Throughout Tropical South America and the West Indies; it has also been collected in Western Tropical Africa. Hb. Kew.

46. CLITORIA.

Clitoria, Linn. Gen. Plant. n. 869; Benth. et Hook. Gen. Plant. i. p. 528.

Herbs or shrubs. About twenty-seven species, widely dispersed in warm countries.

1. **Clitoria glycinoides,** DC. Prodr. ii. p. 234.

Panama, Obispo railway-station (*S. Hayes*, 312), without locality (*Halsted*).—West Indies and Tropical South America. Hb. Kew.

2. **Clitoria grandiflora,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 189.

Centrosema grandiflorum, Walp. Rep. v. p. 529.

South Mexico, oak-woods at Mirador and Zacuapan, at 3000 feet (*Galeotti*, 3284). In Hb. Kew this number of Galeotti's collection is referred to *Centrosema pubescens*.

3. **Clitoria javitensis,** Benth. in Journ. Linn. Soc. ii. p. 42.

Neurocarpum javitense, H. B. K.

South Mexico, Vera Cruz (*Schiede*), State of Mexico (*Hegewisch*); Panama, Frijoli railway-station (*S. Hayes*, 492), without locality (*Cuming*).—Northern part of South America. Hb. Kew.

4. **Clitoria mariana,** Linn. Sp. Pl. p. 1026.

Clitoria mexicana, Link.

In North America from New Jersey, through the Eastern States southward to—South Mexico, Talea (*Hartweg*), forests of Juquilla in the Cordillera of Oaxaca and woods of El Rincon (*Galeotti*, 3176, 3146), Vera Cruz (*Linden*, 689), in thickets between Jalapa and Hualtepec, and near San Andres (*Schiede*). Hb. Kew.

5. **Clitoria ? multiflora,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 188.

South Mexico, savannas of Mirador, at 3000 feet, and oak-woods near Comaltepec, on the western slope of Oaxaca (*Galeotti*, 3232, 3290).

6. **Clitoria polystachya,** Benth. Pl. Hartw. p. 60.

South Mexico, Talea (*Hartweg*, 454), San Dionysio, Oaxaca (*Andrieux*, 463). Hb. Kew.

7. **Clitoria portobellensis,** Beurling, in Vetensk. Akad. Handl. 1854, p. 119.

Panama, mountain woods (*Billberg*).

8. **Clitoria schiedeana,** Schl. in Linnæa, xii. p. 284.

South Mexico, in thickets near Jalapa (*Schiede*).

47. COLOGANIA.

Cologania, Kunth, Mim. et Pl. Leg. p. 204; Benth. et Hook. Gen. Plant. i. p. 529.

About ten species of twining herbs, inhabiting Mexico and the Andes of South America.

1. **Cologania ? affinis,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 188.

South Mexico, oak-woods in the German colony of Mirador (*Galeotti*, 3283).

2. **Cologania angustifolia,** Kunth, Mim. et Pl. Leg. t. 58; H. B. K. Nov. Gen. et Sp. vi. p. 414.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 189, 191, 193); South Mexico, between Real de Moran and Actopan (*Humboldt & Bonpland*), Zimapan (*Coulter*), mountain over Arcoalo mine and Chico, and between Tlalpuxahua and Pateo (*Graham*), Tizapan (*Bourgeau*, 328). Hb. Kew.

3. **Cologania humifusa,** Hemsl. Diag. Pl. Nov. pars 3, p. 47.

Procumbens, novellis fulvo pilosis, ramis brevibus, foliis brevissime petiolatis trifoliolatis, foliolis obovato-ellipticis vel interdum fere orbicularibus subtus venis lateralibus prominentibus, floribus majusculis solitariis vel 2–3 aggregatis subsessilibus vel longiuscule pedunculatis, ovario breviter stipitato ad 16-ovulato, legumine sæpissime polyspermo extus longissime fulvo hispidulo-piloso, seminibus parvis atro-fuscis nitidis compresso-globosis.

Herba perennis, radice crassa (sicca interdum 6–8 lin. diametro), subsimplici, ramis procumbentibus brevibus (raro ultra pedalibus), graciliusculis, crebriuscule foliosis, longe retrorsum hispidulo-pilosis. *Folia* brevissime petiolata, imparipinnata, rhachi brevissima; foliola brevissime petiolulata, obovato-elliptica vel interdum fere orbicularia, 6–12 lin. longa vel diametro (lateralia sæpe minora), utrinque præcipue subtus appresse hispidulo-pilosa (pilis fulvescentibus), interdum supra demum glabra, subtrinervia, venis primariis lateralibus subtus prominentibus; stipulæ oblongæ, obtusæ, circiter 3 lin. longæ. *Flores* majusculi (12–15 lin. longi), axillares, solitarii vel 2–3 aggregati, basi bibracteati; pedunculi nunc 3–4 lin. nunc 1–2 poll. longi; bracteæ subulatæ; calyx pilosus; carina et alæ longissime graciliterque unguiculatæ, alarum laminæ basi cordatæ, carina alis brevior; vexillum amplum, complicatum, infra medium minute appendiculatum; ovarium breviter stipitatum, ad 16-ovulatum. *Legumen* sæpe 1–1½ poll. longum, polyspermum, extus longissime fulvo hispidulo-pilosum; semina parva (sesquilin. diametro), atro-fusca, nitida, compresso-globosa.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 194); South Mexico, Real del Monte (*Coulter*), Santa Fé, valley of Mexico (*Bourgeau*, 330). Hb. Kew.

This is characterized by its habit and foliage.

4. **Cologania intermedia,** H. B. K. Nov. Gen. et Sp. vi. p. 414.

South Mexico, in shady woods, Real del Monte, at 8550 feet (*Humboldt & Bonpland*), without locality (*Graham*, 163). Hb. Kew.

5. **Cologania longifolia,** A. Gray, Pl. Wright. ii. p. 35.

New Mexico.—North Mexico, mountain-ravines on the Sonoita (*Wright*).

6. **Cologania obovata,** Schl. in Linnæa, xii. p. 287.

South Mexico, Mineral del Monte (*Ehrenberg*).

Probably a variety of *C. pulchella.*

7. **Cologania procumbens,** Humb. et Bonpl. Pl. Leg. t. 57; H. B. K. Nov. Gen. et Sp. vi. p. 412.

South Mexico, woods of Zacuapan and Talea, Oaxaca (*Galeotti*, 3331; *Jurgensen*, 597).—Peru. Hb. Kew.

8. **Cologania pulchella,** H. B. K. Nov. Gen. et Sp. vi. p. 413. 1823

Cologania ovalifolia, H. B. K.

Galactia ? purpurea, Mart. et Gal.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 192); South Mexico, near Pazcuaro, at 6780 feet (*Humboldt & Bonpland*), Zimapan and

Real del Monte (*Coulter*, 603), cascade of Regla (*Galeotti*, 3346), near Jalapa (*Schiede*), valley of Mexico (*Bourgeau*, 79, 774), lower part of San Felipe (*Andrieux*, 427), dark woods, Oaxaca, at 7000 feet (*Galeotti*, 3204, 3251), environs of Mexico (*Berlandier*), Chiapas (*Ghiesbreght*, 591), Orizaba (*Botteri*, 718, 721), Mineral del Monte (*Ehrenberg*); GUATEMALA, Volcan de Fuego, 5400 feet (*Salvin*), without locality (*Skinner*).—COLOMBIA, ECUADOR, and PERU. Hb. Kew.

9. **Cologania,** sp.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 195). Hb. Kew.

[*Cologania*, sp.? *Martia mexicana*, Zucc. Abhandl. Münch. Akad. i. p. 339, t. 14 et 15, "est *Cologaniæ* cujusdam specimen floribus apetalis," Benth. et Hook. Gen. Pl. i. p. 529.]

48. AMPHICARPÆA.

Amphicarpæa, Ell. in Journ. Acad. Philadelph. i. p. 372; Benth. et Hook. Gen. Pl. i. p. 529.

About seven species, inhabiting North America, Japan, and the Himalayas.

1. **Amphicarpæa monoica,** Ell. in Journ. Acad. Philadelph. i. p. 372.

Amphicarpæa sarmentosa, Ell.

CANADA, through the Eastern States southward to FLORIDA, TEXAS, and—SOUTH MEXICO, region of Orizaba (*Bourgeau*, 3170). Hb. Kew.

49. TERAMNUS.

Teramnus, Swartz, Fl. Ind. Occ. iii. p. 1238; Benth. et Hook. Gen. Plant. i. p. 530.

About six species of twining herbs, two of which are Asiatic, and one also African, the remainder American.

1. **Teramnus uncinatus,** Sw. Fl. Ind. Occ. iii. p. 1238, t. 25.

Glycine discolor, Mart. et Gal.

?*Glycine elliptica*, Mart. et Gal.

SOUTH MEXICO, Orizaba (*Botteri*, 706, 726), savannas at 2000 to 3000 feet, in the Cordillera of Vera Cruz (*Galeotti*, 3266), region of Orizaba (*Bourgeau*, 2908), valley of Cordova (*Bourgeau*, 1538); COSTA RICA (*Endres*); PANAMA, Empire railway-station (*S. Hayes*, 555).—JAMAICA and north part of SOUTH AMERICA. Hb. Kew.

2. **Teramnus volubilis,** Sw. Fl. Ind. Occ. iii. p. 1238.

Glycine oblonga, Benth.

SOUTH MEXICO, Jalapa to Real del Monte (*Coulter*).—Southward to PERU and in JAMAICA. Hb. Kew.

3. **Teramnus rhombifolius,** Beurling, in Vetensk. Akad. Hand. 1854, p. 120.

PANAMA, in woods (*Billberg*).

Probably not different from *T. uncinatus*.

50. ERYTHRINA.

Erythrina, Linn. Gen. Plant. n. 855; Benth. et Hook. Gen. Plant. i. p. 531.

Trees, shrubs, or herbs. About fifty species, generally dispersed in the warm countries of both hemispheres. Several of the names below may belong to the same species; but, judging from the material in herbaria (although very imperfect), the species must be rather numerous in Mexico and Central America.

1. **Erythrina breviflora,** DC. Prodr. ii. p. 413; Calques des Dess. Fl. Mex. 251.
SOUTH MEXICO, on the river Ayacapixtla (*Moçino & Sessé*).

2. **Erythrina coralloides,** DC. Prodr. ii. p. 413; Calques des Dess. Fl. Mex. 253.
NORTH MEXICO, Guadalupe cañon, Sonora (*Thurber*), summit of mountains north of Imores (*King*), Sierra del Pajarito (*Schott*); SOUTH MEXICO, Misantla (*Schiede*). Hb. Kew.

3. **Erythrina corallodendron,** Linn. Sp. Pl. p. 992, excl. var. β.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 485, 2305), valley of Mexico (*Bourgeau*, 1188); NICARAGUA, Granada (*Œrsted*).—WEST INDIES and northern part of SOUTH AMERICA. Hb. Kew.

4. **Erythrina divaricata,** DC. Prodr. ii. p. 414; Calques des Dess. Fl. Mex. 256.
MEXICO, without locality (*Moçino & Sessé*).

5. **Erythrina glauca,** Willd. Nov. Act. Nat. Scr. Berol. p. 428.
Duchassaingia glauca, Walp. Ann. ii. p. 424.
NICARAGUA, Lake of Nicaragua (*Œrsted*), vicinity of Granada (*Lévy*, 445); PANAMA, common (*S. Hayes*, 486), low swampy ground, Chagres (*Fendler*, 81).—VENEZUELA and CUBA. Hb. Kew.

6. **Erythrina horrida,** DC. Prodr. ii. p. 413; Calques des Dess. Fl. Mex. 252.
MEXICO, on Mount Aya-hual-tempos.

7. **Erythrina leptorhiza,** DC. Prodr. ii. p. 413; Calques des Dess. Fl. Mex. 250.
MEXICO.

8. **Erythrina longipes,** DC. Prodr. ii. p. 413; Calques des Dess. Fl. Mex. 254.
SOUTH MEXICO, Mineral del Monte, Velasco, Cerro Ventoso, Regla, and San Miguel (*Ehrenberg*).

9. **Erythrina patens,** DC. Prodr. ii. p. 414; Calques des Dess. Fl. Mex. 255.
MEXICO.

10. **Erythrina princeps,** A. Dietr. in Otto & Dietr. Allg. Gartz. ii. p. 305.
MEXICO.

11. **Erythrina reticulata,** Presl, Symb. Bot. ii. p. 22, t. 68.
MEXICO.

12. **Erythrina rosea,** A. Dietr. in Otto & Dietr. Allg. Gartz. ii. p. 253.
MEXICO.

13. **Erythrina rubrinervia,** H. B. K. Nov. Gen. et Sp. vi. p. 454.
PANAMA, Boquete, Veraguas (*Seemann*, 1676).—COLOMBIA and VENEZUELA. Hb. Kew.

14. **Erythrina setosa,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 194.
SOUTH MEXICO, Regla, at 6000 feet, and eastern Cordillera of Oaxaca, at 7000 feet (*Galeotti*, 3351, 3427).

15. **Erythrina velutina,** Willd. Nov. Act. Nat. Scr. Berol. iii. p. 426 ?
SOUTH MEXICO, porphyritic rocks of the Cerro Ventoso, near Real del Monte, 7200 to 7800 feet (*Galeotti*, 3354).
The typical plant is from Caraccas.

16. **Erythrina,** sp.
GUATEMALA, base of Volcan de Fuego (*Salvin & Godman*, 230). Hb. Kew.

17. **Erythrina,** sp.
SOUTH MEXICO, environs of Morelia, Michoacan, at 4000 to 5000 feet (*Galeotti*, 3382). Hb. Kew.

18. **Erythrina,** sp.
SOUTH MEXICO, near Oaxaca (*Andrieux*, 464). Hb. Kew.

19. **Erythrina,** sp.
MEXICO (*Graham*, 167). Hb. Kew.

20. **Erythrina,** sp.
NICARAGUA, Segovia (*Œrsted*, 3). Hb. Kew.

21. **Erythrina,** sp. (foliolis utrinque secus nervos et venas aculeolatis).
SOUTH MEXICO, Oaxaca (*Ghiesbreght*). Hb. Kew.

22. **Erythrina,** sp.
NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 182). Hb. Kew.

23. **Erythrina,** sp. (? *E. longipes*, DC. Benth. Pl. Hartw.).
SOUTH MEXICO, Leon (*Hartweg*, 1599). Hb. Kew.

24. **Erythrina,** sp.
SOUTH MEXICO, Zimapan (*Coulter*, 612). Hb. Kew.

25. **Erythrina,** sp.
COSTA RICA, Candelaria, Cartago, and Aguacate (*Œrsted*). Hb. Kew.

26. **Erythrina,** sp.

NICARAGUA (*Tate*). Hb. Kew.

Probably the same as a species collected in Ecuador by Spruce, n. 5970.

27. **Erythrina,** sp.

SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 86). Hb. Kew.

51. MUCUNA.

Mucuna, Adans. ex DC. Prodr. ii. p. 404; Benth. et Hook. Gen. Plant. i. p. 533.

About twenty-two species of climbing herbs or shrubs, inhabiting the warmer regions of both hemispheres.

1. **Mucuna altissima,** DC. Prodr. ii. p. 405.

Dolichos altissimus, Jacq. Amer. t. 182. fig. 85.

PANAMA, on the outskirts of woods near the city of Panama (*Seemann*).—GUADALOUPE; JAMAICA; BRAZIL. Hb. Kew.

2. **Mucuna mutisiana,** DC. Prodr. ii. p. 406.

Negretia mutisiana, H. B. K.

PANAMA, Chagres (*Fendler*, 459); without locality, "peduncles very often 12 to 15 feet long" (*Seemann*).—COLOMBIA. Hb. Kew.

3. **Mucuna urens,** DC. Prodr. ii. p. 405.

Dolichos urens, Jacq. Amer. t. 182. fig. 84.

SOUTH MEXICO, woods near Papantla (*Schiede & Deppe*); PANAMA (*Seemann*, 220).—Southward to PERU and BRAZIL and in the WEST INDIES. Hb. Kew.

Widely dispersed in tropical countries of both hemispheres, but not frequently collected, probably on account of its stinging property.

4. **Mucuna** (§ **Carpopogon**), sp.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1532). Hb. Kew.

52. CALOPOGONIUM.

Calopogonium, Desv. in Ann. Sc. Nat. série 1, ix. p. 423; Benth. et Hook. Gen. Plant. i. p. 534.

Climbing herbs. Four species, inhabiting South and Central America.

1. **Calopogonium brachycarpum,** Benth. in Benth. et Hook. Gen. Plant. i. p. 534.

Stenolobium brachycarpum, Benth. in Ann. Wien. Mus. ii. p. 125.

NICARAGUA (*Œrsted*); COSTA RICA (*Œrsted, Hoffmann*); PANAMA, Chagres (*Fendler*, 79), Veraguas (*Seemann*, 215), without exact locality (*S. Hayes*, 553).—And widely spread in Tropical SOUTH AMERICA. Hb. Kew.

2. **Calopogonium cæruleum,** Desv. in Ann. Sc. Nat. série 1, ix. p. 423.
Stenolobium cæruleum, Benth.

South Mexico, San Blas to Tepic (*Hinds*), near Tantoyuca (*Ervendberg*, 38), valley of Cordova (*Bourgeau*, 1756, 1977), Yucatan and Tabasco (*Johnson*, 41); Nicaragua, Realejo (*Sinclair*); Costa Rica (*Œrsted*); Panama (*S. Hayes*, 439).—West Indies and Eastern Tropical South America to South Brazil. Hb. Kew.

3. **Calopogonium galactoides,** Benth. in Benth. et Hook. Gen. Plant. i. p. 534.
Stenolobium galactoides, Benth. in Ann. Wien. Mus. ii. p. 125.
Galactia hispidula, Benth.

South Mexico, Tepic (*Sinclair*), Vera Cruz to Orizaba (*Müller*, 1145), Orizaba (*Botteri*, 719, 736), valley of Cordova (*Bourgeau*, 1856); Nicaragua (*Œrsted*); Costa Rica, Guanacate (*Œrsted*).—Northern part of South America.

4. **Calopogonium,** sp.
Nicaragua (*Œrsted*, 35). Hb. Kew.

53. GALACTIA.

Galactia, P. Br. Hist. Jam. p. 298; Benth. et Hook. Gen. Plant. i. p. 535.

Prostrate or climbing herbs or erect shrubs, inhabiting warm countries, but most numerous in Tropical America. About fifty species.

1. **Galactia brachystachys,** Benth. in Ann. Wien. Mus. ii. p. 127.
South Mexico, Zimapan (*Coulter*, 608), around Oaxaca (*Andrieux*, 428). Hb. Kew.

2. **Galactia hirta,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 190.
South Mexico, Alpine regions of the eastern Cordillera of Oaxaca, at 7500 feet (*Galeotti*, 3204).

3. **Galactia marginalis,** Benth. in Ann. Wien. Mus. ii. p. 127.
Texas.—Mexico.—Apparently the same from Buenos Ayres and Uruguay. Hb. Kew.

4. **Galactia radiata,** DC. Prodr. ii. p. 238; Calques des Dess. Fl. Mex. 276.
Mexico.

5. **Galactia tenuiflora,** Willd. ex Wight et Arn. Prodr. Fl. Ind. p. 206.
Galactia filiformis, Benth.
Galactia brevistyla, Schl.
Galactia pilosa, Nutt.

Georgia and Florida.—Nicaragua, Granada (*Œrsted*), without locality (*Sinclair*); Panama, Paraiso railway-station (*S. Hayes*, 521).—Northern part of South America, and common in the West Indies; also widely dispersed in Tropical Asia, Africa, and Australia. Hb. Kew.

6. **Galactia tephrodes,** A. Gray, Pl. Wright. ii. p. 34.
NEW MEXICO.—NORTH MEXICO, Janas, Chihuahua (*Thurber*).

7. **Galactia tuberosa,** DC. Prodr. ii. p. 238; Calques des Dess. Fl. Mex. 277.
MEXICO.

8. **Galactia wrightii,** A. Gray, Pl. Wright. i. p. 44.
TEXAS, NEW MEXICO.—NORTH MEXICO, Sierra del Pajarito, Sonora (*Schott*). Hb. Kew.

54. DIOCLEA.

Dioclea, H. B. K. Nov. Gen. et Sp. vi. p. 437; Benth. et Hook. Gen. Plant. i. p. 536.

About sixteen species of shrubby climbers, the greater part American.

1. **Dioclea guianensis,** Benth. in Ann. Wien. Mus. ii. p. 132, β. *velutina.*
Dioclea panamensis, Duchass. fide Grisebach, Bonplandia, 1858, p. 5, nec Seemann.
PANAMA, Empire railway-station (*S. Hayes,* 562), near the city of Panama (*Seemann,* 461), without localities (*Sinclair, Halsted*).—Northern part of SOUTH AMERICA and in TRINIDAD. Hb. Kew.

2. **Dioclea lasiocarpa,** Benth. in Ann. Wien. Mus. ii. p. 133.
PANAMA.—Widely spread in Tropical SOUTH AMERICA.

3. **Dioclea reflexa,** Hook. fil. Fl. Nigr. p. 306.
Dioclea panamensis, Seemann, nec Duchassaing.
PANAMA, Chagres (*Fendler,* 83), on the banks of the river Pequeni (*Seemann,* 455).—Common in many parts of Tropical S. AMERICA and in JAMAICA; also in Tropical AFRICA and ASIA. Hb. Kew.

4. **Dioclea violacea,** Mart. ex Benth. in Ann. Wien. Mus. ii. p. 132.
PANAMA, Empire railway-station (*S. Hayes,* 313).—Tropical SOUTH AMERICA, and in the SANDWICH ISLANDS.

55. CANAVALIA.

Canavalia, Adans. Fam. p. 325; Benth. et Hook. Gen. Plant. i. p. 537.

About twelve species of climbing or prostrate herbs, dispersed in warm regions of both hemispheres, some amphigæous.

1. **Canavalia ensiformis,** DC. Prodr. ii. p. 404.
Canavalia gladiata, DC.
Canavalia brasiliensis, Mart.
SOUTH MEXICO, valley of Cordova (*Bourgeau,* 1758); NICARAGUA, Gulf of Fonseca (*Sinclair*); PANAMA, Paraiso railway-station (*S. Hayes,* 534), Isle of Taboga (*Seemann*).—A common plant in the WEST INDIES and Tropical SOUTH AMERICA, and in Tropical and Subtropical ASIA and AFRICA. Frequently cultivated. Hb. Kew.

2. **Canavalia obtusifolia,** DC. Prodr. ii. p. 404.

South Mexico, on the sea-shore between Tecoluta and Nantla (*Schiede & Deppe*); Panama, Chagres (*Fendler*, 80), trailing along low moist soil of the sea-shore, Aspinwall (*S. Hayes*, 370).—Southward to Brazil; it is also common in the West Indies, and in Australia and Africa. Hb. Kew.

3. **Canavalia rutilans,** DC. Prodr. ii. p. 404; Calques des Dess. Fl. Mex. 279.

Mexico.

Perhaps not specifically different from *C. obtusifolia.*

4. **Canavalia villosa,** Benth. Ann. Wien. Mus. ii. p. 135.

Canavalia rostrata, Benth.
Canavalia multiflora, Hook. et Arn.
Wenderothia discolor, Schl.

South Mexico, Cuernavaca, Iturbide (*Bourgeau*, 1377), Zimapan (*Beechey*), Morelia, Michoacan (*Galeotti*, 3367), Teapa (*Linden*, 753), Orizaba (*Botteri*, 1153, 728), Mirador (*Linden*, 723; *Bourgeau*, 2675); Guatemala, Volcan de Fuego (*Salvin*); Costa Rica, Cartago (*Œrsted*); Panama, Chiriqui (*Seemann*). Hb. Kew.

5. **Canavalia,** sp.

Nicaragua, Chontales (*Tate*, 103). Hb. Kew.

6. **Canavalia,** sp.

South Mexico, valley of Cordova (*Bourgeau*, 1855). Hb. Kew.

7. **Canavalia?**

Wenderothia pilosa, Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 191.

South Mexico, woods of Malpique, Zacuapan, at 3000 feet (*Galeotti*, 3273). Hb. Kew.

Probably the same as *C. villosa,* Benth.

8. **Canavalia?**

Wenderothia? hirsuta, Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 192.

South Mexico, dense woods of Rincon, Talea, Oaxaca, at 4000 feet (*Galeotti*, 3424).

9. **Canavalia?**

Wenderothia glabra, Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 192.

South Mexico, Mirador, at 3000 feet (*Galeotti*, 3307). Hb. Kew.

10. **Canavalia,** sp.

South Mexico, Orizaba (*Botteri*, 59, 1152; *Bourgeau*, 2916, 2668). Hb. Kew.

Apparently an undescribed species; but we have not seen the pod, and there are two of the three species of *Wenderothia* described by Martens and Galeotti which we have not seen; therefore we do not venture to describe it.

56. PHASEOLUS.

Phaseolus, Linn. Gen. Plant. n. 866; Benth. et Hook. Gen. Plant. i. p. 538.

Climbing herbs, or sometimes woody at the base. A genus very numerous in forms, spread over nearly all warm countries. Upwards of 150 have been described as species; but Mr. Bentham estimates the number of good species at about sixty. Several of the names in this enumeration probably belong to the same species.

This genus greatly needs revision; but so few of the types are accessible to us at the time of preparing this for press that we dare not attempt the task.

1. **Phaseolus acutifolius,** A. Gray, Pl. Wright. i. p. 43.

New Mexico.—North Mexico, sides of the Chiricahui mountains (*Wright*), ? Sierra Madre (*Seemann*).

Var. **tenuifolius,** A. Gray, loc. cit.

North Mexico, Guadalupe Pass, Sonora (*Wright*). Hb. Kew.

2. **Phaseolus amplus,** Benth. Bot. Voy. Sulph. p. 85.

Central America (*Sinclair*).—Peru, Venezuela.

3. **Phaseolus angustissimus,** A. Gray, Pl. Wright. ii. p. 33.

New Mexico.—North Mexico, between San Pedro and Santa Cruz, Sonora (*Wright*), Coahuila (*Bigelow*).

4. **Phaseolus anisotrichus,** Schl. in Linnæa, xii. p. 326. 1838) = leptostachyus

South Mexico, in thickets near Jalapa, at Hacienda de la Laguna, and near Papantla (*Schiede*), ? Juquila, western Cordillera of Oaxaca, and near Izmiquilpan (*Galeotti*, 3169 and 3374).

5. **Phaseolus atropurpureus,** DC. Prodr. ii. p. 395; Calques des Dess. Fl. Mex. 244.

Phaseolus schiedeanus, Schl. in Linnæa, xii. p. 323.

Phaseolus canescens, Mart. et Gal.

North Mexico, Sonora Alta (*Coulter*); South Mexico, around Oaxaca (*Andrieux*, 460), Tehuacan de las Granadas, Puebla, at 5000 feet (*Galeotti*, 3225), near Hacienda de la Laguna (*Schiede*); Nicaragua (*Œrsted*). Hb. Kew.

6. **Phaseolus bilobatus,** Engelm. Bot. Wisliz. Exped. p. 25.

North Mexico, Cosiquirachi (*Wislizenus*).

7. **Phaseolus dysophyllus,** Benth. Pl. Hartw. p. 287.

South Mexico, Leon (*Hartweg*), in thickets near Misantla (*Schiede*). Hb. Kew.

8. **Phaseolus falcatus,** Benth. MSS. in Hb. Kew.

South Mexico, San Blas to Tepic (*Coulter*); ? Guatemala, Volcan de Fuego, Dueñas, 5000 feet (*Salvin*). Hb. Kew.

9. **Phaseolus formosus,** H. B. K. Nov. Gen. et Sp. vi. p. 449.

South Mexico, near Toluca, at 8280 feet (*Humboldt & Bonpland*), forests of the Cordillera of Oaxaca and Real del Monte, at 6500 to 8000 feet (*Galeotti*, 3197, 3350, and 3426).

10. **Phaseolus glaber,** Schl. in Linnæa, xii. p. 327.

South Mexico, in thickets near Jalapa and near San Andres (*Schiede*), Jalapa (*Linden*, 676), Orizaba (*Botteri*, 738; *Bourgeau*, 3173). Hb. Kew.

11. **Phaseolus gracilis,** Pœpp. ex Benth. in Ann. Wien. Mus. ii. p. 141.

Nicaragua, without locality (*Ærsted*), Realejo (*Sinclair*, *Hinds*); Panama, near the city of Panama, in meadows (*Seemann*, 233).—Guiana and Cuba. Hb. Kew.

12. **Phaseolus hernandezii,** Savi, in DC. Prodr. ii. p. 395.

North Mexico, without locality (*Hernandez*), cultivated (*Seemann*). Hb. Kew.

13. **Phaseolus heterophyllus,** Willd. H. B. K. Nov. Gen. et Sp. vi. p. 446.

Phaseolus parviflorus, Schl.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 187); South Mexico, valley of Mexico (*Bourgeau*, 80; *Bilimek*, 89), Real del Monte and Zimapan (*Coulter*, 502), Aguas Calientes (*Hartweg*), Orizaba (*Botteri*, 740), Tacubaya (*Bourgeau*, 80; *Schaffner*), in meadows near Valladolid (*Humboldt & Bonpland*), Mineral del Monte (*Ehrenberg*), without special localities (*many other collectors*). Hb. Kew.

14. **Phaseolus leptostachyus,** Benth. in Ann. Wien. Mus. ii. p. 136.

South Mexico, Zimapan (*Coulter*), Oaxaca (*Galeotti*, 3169), Orizaba (*Bourgeau*, 3184, 2669; *Botteri*, 731), Vera Cruz to Orizaba (*Müller*, 1107); Guatemala (*Skinner*). Hb. Kew.

15. **Phaseolus lunatus,** Linn. Sp. Pl. p. 1016.

Phaseolus saccharatus, MacFad.

Phaseolus xuaresii, Zucc.

Phaseolus amazonicus, Benth. &c.

South Mexico, Orizaba (*Botteri*, 680), Acapulco (*Sinclair*), Cuernavaca (*Bourgeau*, 1376); Nicaragua, without locality (*Ærsted*); Honduras, Tigre Island, Gulf of Fonseca (*Sinclair*); Costa Rica, Ujaras (*Ærsted*); Panama (*S. Hayes*, 549).—Cuba, Jamaica and Antigua, and Cistropical South America; also in Tropical Africa and Asia. Hb. Kew.

16. **Phaseolus macrocarpus,** Benth. in Ann. Wien. Mus. ii. p. 140.

Mexico.

17. **Phaseolus macropoides,** A. Gray, Pl. Wright. ii. p. 33.

New Mexico.—North Mexico.

18. **Phaseolus micranthus,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 196.
South Mexico, Juquila, &c., on the western Cordillera of Oaxaca, at 4000 feet (*Galeotti*, 3182).

19. **Phaseolus micranthus,** Hook. et Arn. Bot. Beech. Voy. p. 287.
South Mexico, Jalisco (*Lay & Collie*). Hb. Kew.

20. **Phaseolus multiflorus,** Willd. Sp. Pl. p. 1030.
South Mexico, Michoacan (*Galeotti*, 3379), Zimapan (*Coulter*), Leon (*Hartweg*).—Northern part of South America. Hb. Kew.

21. **Phaseolus obvallatus,** Schl. in Linnæa, xii. p. 328.
South Mexico, woods at 7000 to 8000 feet, Oaxaca (*Galeotti*, 3179), Mineral del Monte (*Ehrenberg*); ? Guatemala, Volcan de Fuego, 7000 feet (*Salvin*). Hb. Kew.

22. **Phaseolus pedicellatus,** Benth. in Ann. Wien. Mus. ii. p. 137.
South Mexico, Real del Monte (*Coulter*, 573), Vera Cruz to Orizaba (*Müller*, 1700), San Nicolas (*Bourgeau*, 940). Hb. Kew.

23. **Phaseolus peduncularis,** H. B. K. Nov. Gen. et Sp. vi. p. 447.
Phaseolus spixianus, Mart.
Phaseolus pascuorum, Mart.
Panama, Chagres (*Fendler*, 69 and 73).—Tropical South America. Hb. Kew.

24. **Phaseolus retusus,** Benth. Pl. Hartw. p. 11.
Texas, New Mexico.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 185), Chihuahua (*Wislizenus*); South Mexico, Aguas Calientes (*Hartweg*). Hb. Kew.

25. **Phaseolus rotundifolius,** A. Gray, Pl. Wright. ii. p. 34.
North Mexico, valley west of the Chiricahui mountains (*Wright*).

26. **Phaseolus semierectus,** Linn. Sp. Pl. p. 1016.
Panama, along the railroad (*S. Hayes*, 122).—Southward to Peru and Brazil and in the West Indies. Hb. Kew.

27. **Phaseolus speciosus,** H. B. K. Nov. Gen. et Sp. vi. p. 452.
South Mexico, Zimapan (*Coulter*), near Misantla (*Schiede*), valley of Cordova (*Bourgeau*, 1534); Guatemala, without locality (*Wendland*), Volcan de Fuego, 5000 feet (*Salvin*).—Venezuela to Ecuador. Hb. Kew.

28. **Phaseolus sylvestris,** H. B. K. Nov. Gen. et Sp. vi. p. 450.
South Mexico, in woods between Valladolid and Ario, near Pazcuaro, 6780 feet (*Humboldt & Bonpland*), Jalapa, Vera Cruz, Talea, Oaxaca, and Moran, near Real del Monte (*Galeotti*, 3300 and 3391). Hb. Kew.

29. **Phaseolus truxillensis,** H. B. K. Nov. Gen. et Sp. vi. p. 451.

Phaseolus adenanthus, Mey. Prim. Fl. Esseq. p. 239; DC. Prodr. ii. p. 394.

Phaseolus cirrhosus, H. B. K.

Phaseolus amœnus, MacFad.

South Mexico, Yucatan and Tabasco (*Johnson*), without locality (*Beechey*); Nicaragua, Volcan el Viejo (*Œrsted*), Realejo (*Œrsted*); Costa Rica, San José (*Œrsted*); Panama, Chagres (*Fendler*, 71).—West Indies and Tropical South America; and in the East Indies and Pacific Islands.

30. **Phaseolus vulgaris,** Linn. ex Savi, Mem. 3, p. 14.

Guatemala, Volcan de Fuego, at 5000 feet (*Salvin*). Hb. Kew.

A species commonly cultivated, and now widely dispersed in most tropical countries. Mr. Bentham thinks it may be of Asiatic origin.

31. **Phaseolus,** sp.

Guatemala, Volcan de Fuego, ridge above Calderas, at 8300 feet (*Salvin*). Hb. Kew.

32. **Phaseolus,** sp.

Costa Rica, Cartago (*Œrsted*, 30). Hb. Kew.

33. **Phaseolus,** sp.

Costa Rica, Volcan Masaya (*Œrsted*, 17). Hb. Kew.

34. **Phaseolus (Drepanocarpus),** sp.

North Mexico, Monterey (*Eaton & Edwards*, 21). Hb. Kew.

35. **Phaseolus,** sp.

South Mexico, Pedregal, valley of Mexico (*Bourgeau*, 941). Hb. Kew.

36. **Phaseolus,** sp.

South Mexico, valley of Mexico (*Bourgeau*, 334). Hb. Kew.

37. **Phaseolus,** sp.

South Mexico, region of Orizaba (*Bourgeau*, 3351). Hb. Kew.

38. **Phaseolus,** sp.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 186). Hb. Kew.

39. **Phaseolus,** sp.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 188), Hb. Kew.

40. **Phaseolus,** sp.

South Mexico, valley of Mexico (*Bourgeau*, 487, 580, 734). Hb. Kew.

41. **Phaseolus,** sp.

South Mexico, Pedregal, valley of Mexico (*Bourgeau*, 576). Hb. Kew.

57. MINKELERSIA.

Minkelersia, Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 200; Benth. et Hook. Gen. Plant. i. p. 539.

Herbaceous plants; the following are the only species known:—

1. **Minkelersia biflora,** Hemsley, Diag. Pl. Nov. pars 3, p. 48. (Tab. XVI. figg. 1–7.)

Foliolis omnibus ovatis, lateralibus obliquis nec unilateraliter lobatis, pedunculis bifloris tribracteatis, bracteis juxta flores involucrum formantibus, floribus sessilibus, vexillo vix unguiculato, ovario pubescente ad 20-ovulato.

Herba annua vel perennis, reptans vel volubilis, ramis gracillimis, parcissime puberulis, nitidis, internodiis longiusculis. *Folia* graciliter petiolata, pinnatim trifoliolata, rhachi brevi; foliola breviter petiolulata, omnia ovata, circiter 10 lin. longa, obtusa, basi rotundata, tenuia, subtrinervia, parcissime puberula, petiolo 1–1½-pollicari; stipulæ ovatæ, obtusæ, patentes vel reflexæ, 3–4 lin. longæ; stipellæ minutissimæ. *Florum pedunculi* axillares, foliis multoties longiores, graciles, apice biflori, tribracteati; bracteæ juxta flores involucrum formantes, stipulis simillimæ; flores sessiles; calycis puberuli lobi ovato-oblongi, obtusi, minute ciliati, tubo triente longiores; vexillum obovato-oblongum, deorsum gradatim attenuatum, vix vere unguiculatum; alæ oblique obovatæ, semicordatæ, longiuscule unguiculatæ; carina angusta, canaliculata, vexillo subæquans, apice cum stylo staminibusque arcte trispiralis; ovarium pubescens, ad 20-ovulatum. *Legumen* ignotum.

South Mexico, valley of Mexico (*Schaffner*). Hb. Kew.

EXPLANATION OF TAB. XVI. Figg. 1–7.

Fig. 1, portion of plant, nat. size; 2, keel; 3, a wing; 4, standard; 5, calyx and ovary; 6, keel and stamens; 7, anther and free part of filament: all enlarged.

2. **Minkelersia galactioides,** Mart. et Gal. (char. amplif.). (Tab. XVI. figg. 8–15.)

Foliolo terminali ovato-oblongo, foliolis lateralibus oblique ovatis unilateraliter obscure lobatis, pedunculis unifloris sæpissime tribracteatis, bracteis ad 3 lineas infra flores insertis, vexillo distincte unguiculato, ovario pubescente, ad 15-ovulato, legumine maturo parvo glabro calyce persistente suffulto.

Herba annua, reptans vel volubilis, ramis gracillimis, parcissime puberulis, nitidis. *Folia* graciliter petiolata, pinnatim trifoliolata, rhachi brevi; foliola breviter petiolulata, terminale ovato-oblongum vel oblongum, 9–10 lineas longum, 2½–3½ lineas latum, lateralia oblique ovata, obscure unilateraliter lobata, 8–10 lineas longa, 4–7 lineas lata, omnia obtusiuscula, pennivenia, iis *M. bifloræ* crassiora, petiolo 1–1½-pollicari; stipulæ ovatæ vel ellipticæ, patentes vel reflexæ, ad 3 lineas longæ, persistentes; stipellæ minutæ, subulatæ. *Florum pedunculi* axillares, duplo longiores foliis, graciliusculi, uniflori, sæpissime tribracteati, bracteis ad 3 lineas infra flores insertis; calycis parcissime puberuli lobi ovato-oblongi, obtusi, dimidio longiores tubo; vexillum obovato-oblongum, distincte sed breviter unguiculatum; alæ oblique obovato-oblongæ, longiuscule unguiculatæ, vix semicordatæ; carina angusta, canaliculata, vexillo subæquans, apice cum stylo staminibusque arcte bi- trispiralis; ovarium pubescens, ad 15-ovulatum. *Legumen* subcylindricum, compressum, maturum, glabrum, 2½-pollicare, calyce persistente suffultum.—*Mart. et Gal. in Bull. Acad. Brux.* x. pars 2, p. 200.

South Mexico, Cordillera of Oaxaca, near the Pacific Ocean, at 4000 to 6000 feet (*Galeotti*, 3175). Hb. Kew.

The only known ripe pod is in the herbarium of Dr. Ed. Martens, of Louvain, and it was kindly sent to us to be drawn for our Plate.

EXPLANATION OF TAB. XVI. Figg. 8–15.

Fig. 8, portion of plant, nat. size; 9, standard; 10, wing; 11, keel, enclosing stamens and pistil; 12, stamens and pistil removed from keel; 13, very young pod; 14, anther and free portion of filament: all enlarged; 15, pod, natural size.

58. VIGNA.

Vigna, Savi, Mém. Phas. iii. p. 7; Benth. et Hook. Gen. Plant. i. p. 539.

About forty-five herbaceous species, generally dispersed in the tropics. Two or three species are almost ubiquitous in tropical countries. In Tropical Africa there are thirty-seven species.

1. **Vigna luteola,** Benth. in Mart. Fl. Bras. fasc. xxiv. p. 193, t. 50. fig. 2.

Vigna brachystachys, Benth.
Vigna villosa, Savi.
Dolichos mexicanus, Schl.

Mexico (*Botteri*, 716; *Bilimek*, 95; *Bourgeau*, 3178); Guatemala (*Salvin & Godman*); Nicaragua (*Œrsted*, 23); Panama (*Fendler*, 68; *S. Hayes*, 564).—Common throughout Tropical America and the Tropics of the Old World. Hb. Kew.

2. **Vigna vexillata,** Benth. Mart. Fl. Bras. xxiv. p. 193, t. 50. fig. 1.

Panama, near the city of Panama (*Seemann*); Paraiso railway-station (*S. Hayes*, 533).—Very widely distributed in Tropical South America, and common in Tropical Asia, Africa, and Australia. Hb. Kew.

3. **Vigna,** sp.

Costa Rica, at Cartago (*Œrsted*). Hb. Kew.

[*Vigna lutea*, A. Gray, is a widely dispersed species, likely to occur in Mexico and Central America.]

59. PACHYRHIZUS.

Pachyrhizus, Rich. in DC. Mém. Lég. p. 379; Benth. et Hook. Gen. Plant. i. p. 540.

The genus is limited to the two following herbaceous species:—

1. **Pachyrhizus angulatus,** Rich. in DC. Prodr. ii. p. 402; Benth. in Mart. Fl. Bras., Papil. t. 53.

Tæniocarpum articulatum, Desv.
Robynsia macrophylla, Mart. et Gal.

Mexico, region of Orizaba (*Bourgeau*, 1219, 2917), Oaxaca (*Andrieux*, 432); Nicaragua (*Œrsted*, 33); Panama (*Fendler*, 74, 75; *Seemann*, 211). Hb. Kew.

It is uncertain where this plant is indigenous and where only naturalized, as it is generally cultivated in the tropics. At the present time it is widely dispersed in a wild state in Tropical Asia, Africa, and America.

2. **Pachyrhizus palmatilobus,** Benth. et Hook. Gen. Plant. i. p. 540.

Dolichos palmatilobus, Moç. & Sessé in DC. Prodr. ii. p. 399.

Robynsia lobata, Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 193.

South Mexico, Mirador, at the Rancho of San Carlos, 3000 feet (*Galeotti*, 3278), woods and savannas of Juchatengo, Cordillera of Oaxaca (*Galeotti*, 3167), near Tehuantepec (*Andrieux*, 435). Hb. Kew.

[*Cajanus indicus*, Spreng., an Old-World plant, is commonly cultivated in tropical countries, and naturalized in many places.]

60. RHYNCHOSIA.

Rhynchosia, Lour. Fl. Cochinch. p. 460; Benth. et Hook. Gen. Plant. i. p. 542.

Herbs or shrubs. Generally dispersed in warm countries, a few species in Temperate South Africa, North America, and North-eastern Asia. Altogether there are about seventy-five species.

1. **Rhynchosia calycosa,** Hemsl. Diag. Pl. Nov. pars 3, p. 48.

Herbacea, volubilis, ramis puberulis striatulis, foliis longiuscule petiolatis, foliolis ovato-rhomboideis obtusis lateralibus obliquis utrinque minute puberulis tenuiter reticulato-venosis, floribus racemosis brevissime pedicellatis, calycis puberuli lobis tricostatis obtusis paulo longioribus quam petala, carina quam alæ et vexillum longiore, vexillo glabro, ovario superne villoso, stylo filiformi glabro, legumine glabrescente oblique oblongo, calyce aucto suffulto.

Herba volubilis, ramis graciliusculis, puberulis, striatulis. *Folia* petiolata, pinnatim trifoliolata, rhachi 8–10 lineas longa, petiolo gracili, usque sesquipollicari; foliola breviter petiolulata, membranacea, ovato-rhomboidea vel lateralia, interdum ovata, 1½–2 poll. longa et lata, lateralia minora, omnia obtusa, utrinque minute puberula, tenuiter reticulato-venosa; stipulæ deciduæ non visæ; stipellæ minutissimæ. *Flores* racemosi, brevissime pedicellati, circiter 5 lineas longi; racemi pedunculati, pauciflori (15–30), 3–8-pollicares, bracteati, bracteis parvis, ovatis, subulatis, cito deciduis; calycis intus extusque puberuli tubus brevissimus, lobi tricostati, oblongi, 2 posteriores supra medium connati, 2 laterales falcati, anterior complicatus, omnes obtusi vel vix acuti, petalis longiores; vexillum complicatum, orbiculari-ellipticum, apice retusum, basi cordatum, breviter unguiculatum, omnino glabrum; alæ oblongæ, graciliter unguiculatæ, semihastatæ; carina alis et vexillo longior, oblonga, graciliter unguiculata; ovarium sessile, superne argenteo-villosum, stylo elongato, filiformi, glabro. *Legumen* (maturum non visum) oblique oblongum, 9–12 lineas longum, calyce aucto suffultum, sæpissime dispermum.

Panama, Chagres (*Fendler*, 72). Hb. Kew.

Allied to *R. longeracemosa*, Mart. et Gal., and *R. reticulata*, DC., from which it is easily distinguished by its foliage, calyx, short glabrous standard, &c.

2. **Rhynchosia caribæa,** DC. Prodr. ii. p. 384.

Glycine caribæa, Jacq. Ic. Pl. Rar. t. 146.

South Mexico, near Tantoyuca (*Ervendberg*, 35).—Common in the West Indies and the northern part of South America; also in Tropical and South Africa.

3. **Rhynchosia discolor,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 199.

South Mexico, banks of streams, Sierra de Yavesia, Cordillera of Oaxaca (*Galeotti*, 3151). Hb. Kew.

This number is referred to *R. macrocarpa* in Hb. Kew.

4. **Rhynchosia erythrinoides,** Schl. et Ch. in Linnæa, v. p. 587.

South Mexico, between Misantla and Nantla (*Schiede & Deppe*).

5. **Rhynchosia hirsuta,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 198.

South Mexico, woods of Zacuapan, 3000 feet (*Galeotti*, 3257).

6. **Rhynchosia longeracemosa,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 198.

North Mexico, Monterey (*Edwards*); South Mexico, woods at 3000 feet, Vera Cruz (*Galeotti*, 3322), Mirador (*Linden*, 684), Orizaba (*Müller*, 71; *Bourgeau*, 2568; *Botteri*, 712), Zimapan and Jalapa (*Coulter*), near Cordova (*Bourgeau*, 2403); Panama, near the city of Panama (*Seemann*). Hb. Kew.

Mr. Bentham (Fl. Bras. xv. pars 1, p. 203) refers this to *R. reticulata*, DC., from which it appears to be distinct.

7. **Rhynchosia macrocarpa,** Benth. Pl. Hartw. p. 11.

South Mexico, Aguas Calientes (*Hartweg*, 58), Oaxaca, rivulets at 6000 to 7000 feet (*Galeotti*, 3151), without locality (*Sallé*). Hb. Kew.

8. **Rhynchosia menispermoides,** DC. Mém. Lég. p. 364, t. 55.

Texas.—South Mexico, Acapulco (*Née*), sandy hills near Santa Cruz (*Schiede & Deppe*).

9. **Rhynchosia minima,** DC. Prodr. ii. p. 385; Benth. in Mart. Fl. Bras. xxiv. t. 54. fig. 2.

? *Rhynchosia punctata,* DC.
Rhynchosia mexicana, Hook. et Arn.
Glycine lamarckii, H. B. K.

Florida and Texas.—Mexico, Vera Cruz (*Müller*, 665); Nicaragua, gulf of Fonseca (*Sinclair*), without locality (*Ærsted*).—Common in the West Indies, and in South America to Peru and South Brazil, and occurring in almost all tropical and subtropical countries. Hb. Kew.

10. **Rhynchosia phaseoloides,** DC. Prodr. ii. p. 385.

Nicaragua, Chontales (*Tate*, 267); Panama, Chagres (*Fendler*, 66).—Common in the West Indies and Tropical South America. Hb. Kew.

Grisebach (Fl. Brit. W. Ind.) refers *R. precatoria* and *caribæa* to this species.

11. **Rhynchosia portobellensis,** Beurling, in Vetensk. Akad. Handl. 1854, p. 121.
PANAMA, in woods (*Billberg*).

12. **Rhynchosia precatoria,** DC. Prodr. ii. p. 385; Seem. Bot. Voy. 'Herald,' t. 20.
Glycine precatoria, H. B. K.
SOUTH MEXICO, near Acapulco (*Humboldt & Bonpland*); PANAMA, volcano of Chiriqui (*Seemann*). Hb. Kew.

13. **Rhynchosia senna,** Gill. in Hook. Bot. Misc. iii. p. 199; Benth. in Mart. Fl. Bras. xv. pars 1, p. 205.
Rhynchosia texana, Torr. & Gray.
South-eastern States of NORTH AMERICA.—NORTH MEXICO, Sonora (*Torrey*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 190).—ECUADOR, SOUTH BRAZIL, URUGUAY, and the ARGENTINE REPUBLIC. Hb. Kew.

61. ERIOSEMA.

Eriosema, DC. ex Desv. in Ann. Sc. Nat. sér. 1, vol. ix. p. 421; Benth. et Hook. Gen. Plant. i. p. 543.

About forty herbaceous and shrubby species, most abundant in South America and Tropical and South Africa. One species has a wide range in Asia and Australia.

1. **Eriosema crinitum,** G. Don, Gen. Syst. ii. p. 348.
SOUTH MEXICO, Cordillera of Vera Cruz (*Galeotti*, 3257); PANAMA, in meadows near the city of Panama (*Lobb*).—WEST INDIES and Subtropical and Tropical SOUTH AMERICA. Hb. Kew.

2. **Eriosema diffusum,** G. Don, Gen. Syst. ii. p. 347.
Glycine diffusa, H. B. K. Nov. Gen. et Sp. v. t. 572.
SOUTH MEXICO, Mirador (*Linden*, 702), Cordillera of Vera Cruz at 3000 feet (*Galeotti*, 3404), Hacienda de la Laguna (*Schiede*), Rio Blanco near Orizaba (*Bourgeau*, 2674); Mexico (*Bilimek*, 186); GUATEMALA, San Gerónimo, Vera Paz (*Bernoulli*, 1014); NICARAGUA, Granada (*Œrsted*); COSTA RICA, Aguacate (*Œrsted*); PANAMA, Isle of Taboga &c. (*Seemann*).—COLOMBIA. Hb. Kew.

3. **Eriosema grandiflorum,** Seem. Bot. Voy. 'Herald,' p. 345.
Rhynchosia grandiflora, Ch. et Schl.
NORTH MEXICO, Cerro de Pinal (*Seemann*); Bolaños (*Coulter*); SOUTH MEXICO, Oaxaca (*Ghiesbreght*), Hacienda de la Laguna (*Schiede & Deppe*). Hb. Kew.

4. **Eriosema pulchellum,** G. Don, Gen. Syst. ii. p. 348.
Glycine pulchella, H. B. K.
SOUTH MEXICO, Mirador (*Linden*, 717), without habitats (*Sallé, Harris*), region of Orizaba (*Bourgeau*, 2674 bis). Hb. Kew.

5. **Eriosema simplicifolium,** G. Don, Gen. Syst. ii. p. 348.

Eriosema lancifolium, Benth.

. Panama (*Seemann*).—Trinidad and the northern and eastern parts of South America. Hb. Kew.

6. **Eriosema violaceum,** G. Don, Gen. Syst. ii. p. 347.

Panama, abundant (*Seemann*).—Tropical South America and Trinidad. Hb. Kew.

Tribe DALBERGIEÆ.

There are twenty-four genera of this tribe, consisting chiefly of large trees and tall climbing shrubs, inhabiting tropical and subtropical regions, where they are generally distributed, but very rare in Australia.

The species are satisfactorily defined, as Mr. Bentham monographed them some years ago in the 'Journal of the Linnean Society,' vol. iv. supplement, pp. 1–134.

62. DALBERGIA.

Dalbergia, Linn. fil. Suppl. p. 52; Benth. et Hook. Gen. Plant. i. p. 544.

Trees and shrubs. Generally dispersed in Tropical Asia, Africa, and America; and one species occurs in Australia.

1. **Dalbergia amerimnum,** Benth. in Journ. Linn. Soc. iv. suppl. p. 36.

Amerimnum brownei, Sw.

Nicaragua, without exact localities (*Sinclair*, *Œrsted*, and others); Panama, common on both the Pacific and Atlantic coasts (*Seemann*), Rio-Grande swamp (*S. Hayes*, 78).—West Indies and north part of South America. Hb. Kew.

2. **Dalbergia calycina,** Benth. in Journ. Linn. Soc. iv. suppl. p. 35.

Guatemala, without locality (*Friedrichsthal*). Hb. Kew.

3. **Dalbergia campeachiana,** Benth. in Journ. Linn. Soc. iv. suppl. p. 37.

South Mexico, forests of Campeche, Yucatan (*Linden*, 1329), Yucatan and Tabasco (*Johnson*), without habitat (*Jurgensen*, 226). Hb. Kew.

4. **Dalbergia glomerata,** Hemsley, Diag. Pl. Nov. pars 1, p. 8.

Puberula, foliis 6–8-pollicaribus, foliolis 5–6-jugis petiolulatis membranaceis ovato-oblongis obtusis sæpius mucronulatis, floribus minimis glomerato-cymosis, cymis parvis densis pedunculatis.

Frutex vel *arbor,* novellis plus minusve rufo-pubescentibus. *Folia* petiolata, 6–7-pollicaria; foliola 5–6-juga, petiolulata, membranacea, ovato-oblonga, 1½–2 poll. longa, obtusa, sæpius mucronulata, præcipue subtus appresse pilosula, petiolo ad pollicari, rhachi gracili, petiolulis ad sesquilin. longis. *Flores* minimi, basi bibracteolati, vix sequilineam longi, in cymas axillares densas glomeratas ad 9 lin. diametro dispositi; calyx 5-lobatus, lobis summis latioribus obtusis, infimo acuto; petala fere æquilonga, vexillo suborbiculari, alis oblongo-ellipticis, omnia breviter unguiculata. *Stamina* 9(?); filamenta inæquilonga; antheræ didymæ. *Ovarium* glabrum, longiuscule stipitatum, 2–3(?)-ovulatum.

South Mexico, Sierra Zongolica (*Botteri*, 1027). Hb. Kew.

The specimen of this species is very young; but the plant is clearly allied to *D. campeachiana*, which has larger flowers in looser cymes, and smaller, almost sessile, often retuse leaflets.

5. **Dalbergia retusa,** Hemsley, Diag. Pl. Nov. pars 1, p. 8.

Puberula, foliis petiolatis, foliolis 4–5-jugis breviter petiolulatis ovato-oblongis retusis 1½–4-pollicaribus, floribus corymbosis.

Arbor 20–25-pedalis, novellis puberulis. *Folia* petiolata, 6–9-pollicaria; foliola 4–5-juga, petiolulata, coriacea, ovato-oblonga, 1½–4-pollicaria, retusa, subtus sparsim puberula, supra glaberrima nitida, petiolulis ad 2 lin. longis. *Flores* albi, corymbosi, pedicellati, basi bibracteolati, 8–9 lin. longi; corymbi pauciflori, pedunculati, foliis breviores; bracteolæ minutæ; calyx campanulatus, 5-dentatus, dente inferiore acuto, cæteris brevibus rotundatis; vexillum cucullato-orbiculatum; carina obtusa, alis brevior; stamina 10, monadelpha, antheris minutis; ovarium glabrum, stipitatum, 5–6-ovulatum. *Legumen* maturum deest.

Panama, in woods at Paraiso (*S. Hayes*, 642). Hb. Kew.

6. **Dalbergia,** sp.

South Mexico, region of Orizaba (*Bourgeau*, 2834). Hb. Kew.

7. **Dalbergia,** sp.

Costa Rica, Cartago (*Œrsted*). Hb. Kew.

63. ECASTAPHYLLUM.

Ecastaphyllum, Rich. in Pers. Syn. Pl. ii. p. 277; Benth. et Hook. Gen. Plant. i. p. 545.

Five shrubby species, all found in America, and two of them extending to Western Tropical Africa.

1. **Ecastaphyllum brownei,** Pers. in DC. Prodr. ii. p. 420.

Ecastaphyllum molle, Miq.

Florida.—Nicaragua, Graytown (*Tate*, 342); Panama, Aspinwall, sea-side (*S. Hayes*, 155), Chagres (*Fendler*, 315).—Common in Tropical South America and the West Indies; also in Western Tropical Africa. Hb. Kew.

64. MACHÆRIUM.

Machærium, Pers. Syn. Pl. ii. p. 276; Benth. et Hook. Gen. Plant. i. p. 545.

Nearly sixty arboreous and frutescent species, all endemic in America.

1. **Machærium acuminatum,** H. B. K. Nov. Gen. et Sp. vi. p. 391.

The typical plant inhabits Venezuela.

Var. β. **latifolium,** Benth. in Journ. Linn. Soc. iv. suppl. p. 65.

South Mexico, region of Orizaba (*Bourgeau*, 2552; *Botteri*, 1031), Cordova (*Bourgeau*); Nicaragua, between Granada and Nicaragua (*Œrsted*). Hb. Kew.

2. **Machærium angustifolium,** Vogel in Linnæa, xi. p. 193.

Machærium affine, Benth.

Machærium acaciæfolium, Mart.

Panama, Paraiso railway-station (*S. Hayes*, 328; *Seemann*, 465), without localities (*Sinclair & Hinds*); South Mexico, without locality (*Galeotti*, 22), valley of Cordova (*Bourgeau*, 1987).—Tropical South America and the West Indies. Hb. Kew.

3. **Machærium seemannii,** Benth. in Seem. Bot. Voy. 'Herald,' p. 110.

Panama, Boquete (*Seemann*, 1681).—Venezuela. Hb. Kew.

4. **Machærium,** sp.

Nicaragua (*Œrsted*, 7). Hb. Kew.

65. DREPANOCARPUS.

Drepanocarpus, G. A. F. W. Mey. Prim. Fl. Esseq. p. 236; Benth. et Hook. Gen. Plant. i. p. 546.

Eight species of trees and shrubs. With the exception of *D. lunatus*, which also occurs in West Tropical Africa, they are endemic in Tropical America.

1. **Drepanocarpus ? cyathiformis,** DC. Prodr. ii. p. 420; Calques des Dess. Fl. Mex. 284.

Mexico.

2. **Drepanocarpus lunatus,** G. A. F. W. Mey. *l. c.* et in DC. Prodr. ii. p. 420.

South Mexico, Mirador (*Linden*, 1321), Cordillera of Vera Cruz, ravines at 3000 feet (*Galeotti*, 3253); Nicaragua, Segovia (*Œrsted*); Panama, in low swampy woods, Lion-Hill railway-station (*S. Hayes*, 681).—In South America to Brazil, and in the West Indies; also Western Tropical Africa. Hb. Kew.

3. **Drepanocarpus mucronulatus,** Benth., Hemsley, Diag. Pl. Nov. pars 1, p. 8.

Fruticosa, ramulis teretibus gracilibus sparsim puberulis, foliolis multijugis parvis crebris brevissime petiolulatis oblongis mucronatis subtus hirsutis, floribus mediocribus in paniculas angustas densas terminales dispositis, petalis omnibus glabris, staminibus æqualiter diadelphis, ovario sericeo biovulato.

Frutex, ramulis gracilibus, ultimis puberulis. *Folia* breviter petiolata, 2–3-pollicaria, foliola multi- (25–30-)juga, crebra, subcoriacea, brevissime petiolulata, oblonga, 3–5 lin. longa, mucronata, basi obliqua, supra glabra nitida, subtus hirsuta; stipulæ lanceolatæ acutæ. *Flores* brevissime pedicellati, $2\frac{1}{2}$–3 lin. longi, in paniculas angustas densas terminales dispositi; calyx hirsutus, fere æqualiter 5-lobus, lobo anteriore subacuto, cæteris rotundatis; petala omnia glabra, fere æquilonga, unguiculata; carinæ et alæ appendiculatæ; vexillum amplum, orbiculari-cucullatum; stamina 10, æqualiter diadelpha; ovarium sericeum, biovulatum, stylo filiformi elongato arcuato, stigmate parvo. *Legumen* ignotum.

South Mexico, Bolaños (*Coulter*). Hb. Kew.

A very distinct plant, perhaps the type of a new genus. The young pod is straight, and the two ovules probably both mature.

4. **Drepanocarpus microphyllus,** G. A. F. W. Mey. *l. c.* et in DC. Prodr. ii. p. 420.

Panama, Isle of Taboga (*Hinds, Seemann, &c.*). Hb. Kew.

5. **Drepanocarpus,** sp.

Panama, Chagres, hilly regions (*Fendler*, 330). Hb. Kew.

Perhaps a variety of *D. inundatus.*

66. PLATYPODIUM.

Platypodium, Vog. in Linnæa, xi. p. 420; Benth. et Hook. Gen. Plant. i. p. 546.

Two arboreous species, endemic in Tropical America.

1. **Platypodium elegans,** Vogel in Linnæa, xi. p. 422.

Panama, between Gorgona and Matachin (*S. Hayes*).—Brazil. Hb. Kew.

67. PTEROCARPUS.

Pterocarpus, Linn. Gen. Plant. n. 854; Benth. et Hook. Gen. Plant. i. p. 547.

About fifteen arboreous species, dispersed in Tropical Asia, Africa, and America.

1. **Pterocarpus amphymenium,** DC. Prodr. ii. p. 418.

Amphymenium pubescens, H. B. K. 6: 381.

Mexico, between Zumpango and Mescala, in the Cañada de Sopilote (*Humboldt & Bonpland*).

2. **Pterocarpus crispatus,** DC. Prodr. ii. p. 418; Calques des Dess. Fl. Mex. 282.

Mexico.

Bentham refers this, with a doubt, to *P. draco.*

3. **Pterocarpus draco,** Linn. (ex parte), DC. Prodr. ii. p. 418.

? *Pterocarpus officinalis,* Jacq. Amer. t. 183. fig. 92.

Moutouchi suberosa, Aubl. Pl. Guian. ii. p. 748, t. 299.

Nicaragua, San Juan (*Œrsted*); Panama, Frijoli railway-station (*S. Hayes*, 83).—Colombia to Guiana, and the West Indies. Hb. Kew.

4. **Pterocarpus hayesii,** Hemsley, Diag. Pl. Nov. pars 1, p. 8. (Tab. XVII.)

Foliis supremis 9–12-pollicaribus, foliolis 9–13 alternis vix coriaceis ovato-oblongis 4–6-pollicaribus longe acuminatis obtusis secus costam tantum rufo-puberulis, floribus pedicellatis racemosis, racemis ad apices rumulorum aggregatis, ovario hirsuto 3–4-ovulato, legumine maximo suborbiculato venoso-reticulato.

Arbor 60–70-pedalis, ramulis, petiolis calycibusque rufo-puberulis. *Folia* suprema 9 12-pollicaria, petiolata; foliola 9–13, alterna, breviter petiolulata, vix coriacea, ovato-oblonga, 4–6-pollicaria, longe accuminata, obtusa, præter costam glabra, venis transversis distantibus. *Flores* pedicellati, racemosi; racemi 4–6-pollicares, ad apices ramulorum aggregati; pedicelli 3–4 lin. longi, bracteis minutis cito deciduis; calyx 5-dentatus, dentibus obtusiusculis; stamina monadelpha (nec ut in icone); ovarium hirsutum, 3–4-ovulatum, stylo filiformi quam stamina longiore. *Legumen* orbiculare, reticulatum (in siccis), ad 3 poll. diametro.

PANAMÀ, in woods near Matachin (*S. Hayes*, 597). Hb. Kew.

Allied to *P. rohrii* and *P. rufescens*; differing from the former in its longer pedicels, and from the latter in the venation of the leaves, and from both perhaps in the large size of its fruit.

EXPLANATION OF TAB. XVII.

Flowers, fruit, and upper leaf, natural size.

Fig. 1, a flower, enlarged; 2, the same with the petals and calyx-lobes removed, the vexillary stamen incorrectly represented as free; 3, calyx and pistil; 4, ovary; 5, section of the same; 6, keel; 7, standard; 8, a wing: all enlarged.

68. PLATYMISCIUM.

Platymiscium, Vog. in Linnæa, xi. p. 198; Benth. et Hook. Gen. Plant. i. p. 548.

About thirteen arboreous and shrubby species, endemic in Tropical America.

1. **Platymiscium parviflorum,** Benth. in Journ. Linn. Soc. iv. suppl. p. 81.

NICARAGUA, between Granada and Nicaragua (*Ærsted*). Hb. Kew.

2. **Platymiscium polystachyum,** Benth. in Seem. Bot. Voy. 'Herald,' p. 111, t. 21.

PANAMA, near the town of David (*Seemann*, 1674).—COLOMBIA; VENEZUELA; WEST INDIES. Hb. Kew.

3. **Platymiscium trifoliolatum,** Benth. in Journ. Linn. Soc. iv. suppl. p. 82.

SOUTH MEXICO, between San Blas and Guadalaxara (*Coulter*). Hb. Trin. Coll. Dub.

4. **Platymiscium,** sp.

MEXICO (*Sumichrast*, 1753). Hb. Kew.

69. LONCHOCARPUS.

Lonchocarpus, H. B. K. Nov. Gen. et Sp. vi. p. 383; Benth. et Hook. Gen. Plant. i. p. 548.

Trees and shrubs. About fifty species in Tropical America and Africa, one species occurring in Australia.

1. **Lonchocarpus atropurpureus,** Benth. in Journ. Linn. Soc. iv. suppl. p. 91.
NEW SPAIN (Hb. *Pavon*).—VENEZUELA; COLOMBIA to PERU.
It is not certain that this species is found within the limits of our flora.

2. **Lonchocarpus eriophyllus,** Benth. in Journ. Linn. Soc. iv. suppl. p. 94.
SOUTH MEXICO, Puebla (*Andrieux*, 439). Hb. Kew.

3. **Lonchocarpus guatemalensis,** Benth. in Journ. Linn. Soc. iv. suppl. p. 87.

MEXICO, without locality (*Jurgensen*, 159); GUATEMALA, without locality (*Friedrichsthal.*) Hb. Kew.

Var. β. **jurgenseni,** Benth. *l. c.* p. 88.
SOUTH MEXICO (*Jurgensen*, 247). Hb. Kew.

Var. γ? **fendleri,** Benth. *l. c.* p. 88.
PANAMA, Chagres (*Fendler*, 94). Hb. Kew.

4. **Lonchocarpus hondurensis,** Benth. in Journ. Linn. Soc. iv. suppl. p. 91.
SOUTH MEXICO, Tabasco (*Johnson*); BRIT. HONDURAS (*R. Temple*). Hb. Kew.

5. **Lonchocarpus latifolius,** H. B. K. Nov. Gen. et Sp. vi. p. 383.

SOUTH MEXICO, Dos Parentes and Totutla (*Liebmann*); NICARAGUA, Granada (*Œrsted*); PANAMA, island of Coiba (*Seemann*, 627), Aspinwall (*S. Hayes*, 374).—Common in the WEST INDIES, GUIANA, and COLOMBIA. Hb. Kew.

Var. β. **violascens,** Benth. in hb. Kew., et in Journ. Linn. Soc. iv. Suppl. p. 90, without name.
SOUTH MEXICO, Teapa (*Linden*, 732). Hb. Kew.

6. **Lonchocarpus lanceolatus,** Benth. in Journ. Linn. Soc. iv. suppl. p. 92.
NEW SPAIN (*Pavon*). Hb. Boissier.

7. **Lonchocarpus macrocarpus,** Benth. in Journ. Linn. Soc. iv. suppl. p. 91.
NEW SPAIN (*Pavon*).—VENEZUELA to PERU and BOLIVIA.

8. **Lonchocarpus obovatus,** Benth. in Journ. Linn. Soc. iv. suppl. p. 93.
SOUTH MEXICO, Chilha, Puebla (*Andrieux*, 440). Hb. Kew.

9. **Lonchocarpus parviflorus,** Benth. in Journ. Linn. Soc. iv. suppl. p. 89.
SOUTH MEXICO, without locality (*Jurgensen*, 219); NICARAGUA, Segovia and Volcan el Viejo (*Œrsted*). Hb. Kew.

10. **Lonchocarpus phaseolifolius,** Benth. in Journ. Linn. Soc. iv. suppl. p. 93.

SOUTH MEXICO, around Tehuantepec (*Andrieux*, 462). Hb. Kew.

11. **Lonchocarpus rugosus,** Benth. in Journ. Linn. Soc. iv. suppl. p. 92.
SOUTH MEXICO, Campeche (*Houston*). Hb. Mus. Brit.

12. **Lonchocarpus sericeus,** H. B. K. Nov. Gen. et Sp. vi. p. 383, in adnot.

PANAMA, Lion-Hill railway-station (*S. Hayes*, 599).—Widely spread in the WEST INDIES and Tropical SOUTH AMERICA; also in West Tropical AFRICA.

13. **Lonchocarpus unifoliolatus,** Benth. in Journ. Linn. Soc. iv. suppl. p. 90.

MEXICO (*Jurgensen*, 717). Hb. Kew.

14. **Lonchocarpus velutinus,** Benth. in Seem. Bot. Voy. 'Herald,' p. 111.

PANAMA, San Carlos (*Seemann*, 1183); NICARAGUA, without habitat (*Œrsted*). Hb. Kew.

15. **Lonchocarpus,** sp.

SOUTH MEXICO, Acatlan, Puebla (*Andrieux*, 441); GUATEMALA, Volcan de Fuego, 4800 feet (*Salvin*). Hb. Kew.

16. **Lonchocarpus,** sp.

MEXICO (*Bates*). Hb. Kew.

Perhaps the same as the preceding.

17. **Lonchocarpus,** sp.

PANAMA (*S. Hayes*, 1). Hb. Kew.

18. **Lonchocarpus?,** sp.

Gonacatepec (*Andrieux*, 442). Hb. Kew.

19. **Lonchocarpus,** sp.

SOUTH MEXICO, region of Orizaba (*Bourgeau*, 2834). Hb. Kew.

20. **Lonchocarpus,** sp.

GUATEMALA, Barranco Hondo, 3800 feet, Volcan de Fuego (*Salvin*). Hb. Kew.

[The flowers of nos. 15, 16, and 18 are exactly the same; but the specimens differ considerably in foliage. It is doubtful whether they will be retained in the genus when the fruit is known, as the upper stamen is quite free.]

70. PISCIDIA.

Piscidia, Linn. Gen. Plant. n. 856; Benth. et Hook. Gen. Plant. i. p. 550.

One arboreous species, endemic in the New World.

1. **Piscidia erythrina,** Linn., ex Benth. in Journ. Linn. Soc. iv. suppl. p. 116; Lam. Illustr. t. 605.

FLORIDA.—SOUTH MEXICO, between Acapulco and Mazatlan, in the valley of the river Papagallo, and near La Venta de Tierra Colorada (*Humboldt & Bonpland*), near Tantoyuca (*Ervendberg*).—WEST INDIES, and, according to *Grisebach*, in SOUTH AMERICA to Guayaquil.

71. MUELLERA.

Muellera, Linn. fil. Suppl. p. 53; Benth. et Hook. Gen. Plant. i. p. 550.

Limited to these two arboreous species, endemic in America:—

1. **Muellera mexicana,** Benth. in Journ. Linn. Soc. iv. suppl. p. 117. 860

? *Cyanobotrys mexicana,* Zucc. Pl. Nov. fasc. v. p. 30, t. 5.

Mexico.

2. **Muellera moniliformis,** Linn. f., ex DC. Prodr. ii. p. 259.

Nicaragua, Graytown (*Tate*, 97); Panama, Rio Grande (*S. Hayes*, 79).—Guiana, North Brazil, and the West Indies. Hb. Kew.

72. ANDIRA.

Andira, Lam. Dict. i. p. 171; Benth. et Hook. Gen. Plant. i. p. 550.

Fine trees. About seventeen species inhabiting Tropical America, one of which is also found in West Tropical Africa, where also a second doubtful species occurs.

1. **Andira excelsa,** H. B. K. Nov. Gen. et Sp. vi. p. 385.

Andira racemosa, Lam. Ill. t. 604. fig. 1.

South Mexico, near la Venta de Tierra Colorada (*Humboldt & Bonpland*); Guatemala (*Friedrichsthal*); Nicaragua, Lake of Nicaragua (*Œrsted*); Costa Rica, La Garita (*Œrsted*); Brit. Honduras, Belize (*Marsh*); Panama, Paraiso railway-station (*S. Hayes*), without any indications of locality (*Seemann & Cuming*).—Widely dispersed in the West Indies and Tropical South America; also in West Tropical Africa. Hb. Kew.

2. **Andira,** sp.

Nicaragua, between Granada and Nicaragua (*Œrsted*). Hb. Kew.

73. DIPTERYX.

Dipteryx, Schreb. Gen. Plant. p. 485; Benth. et Hook. Gen. Plant. i. p. 551.

Eight arboreous species, restricted to Tropical America.

1. **Dipteryx oleifera,** Benth. in Hook. Kew Journ. Bot. ii. p. 235.

Mexico; Honduras. Hb. Kew.

Tribe SOPHOREÆ.

About thirty genera of trees and shrubs belong to this tribe. The species mostly inhabit warm countries, and are generally dispersed; a few occur in temperate regions.

74. SOPHORA.

Sophora, Linn. Gen. Plant. n. 508; Benth. et Hook. Gen. Plant. i. p. 555.

Trees, shrubs, and herbs. About twenty-two species, dispersed in the most distant countries, including temperate regions. Different botanists regard the species referred hither by Mr. Bentham as including the types of several distinct genera.

1. **Sophora secundiflora,** Lag. Rev. Hort. sér. 4, iii. p. 201, t. 11.

Sophora speciosa, Benth.
Virgilia secundiflora, Cav. Ic. t. 401.
Dermatophyllum speciosum, Scheele.
Broussonetia speciosa, Ortega, Dec. 61, t. 7.

Texas; New Mexico.—North Mexico, Rinconada Pass, Nuevo Leon (*Thurber*), Monterey, Saltillo, and Parras (*Gregg*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 200). Hb. Kew.

2. **Sophora sericea,** Nutt. Gen. i. p. 280.

Texas; New Mexico.—North Mexico, San Elceario, Sonora, Coahuila, &c. (*Wright*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 199). Hb. Kew.

3. **Sophora tomentosa,** Linn. Sp. Pl. p. 533; Lam. Ill. t. 325. fig. 2.

Sophora occidentalis, Linn.

Panama, Aspinwall (*S. Hayes*, 152).—Common in the West Indies and in Eastern South America to Brazil; and in Tropical Asia, Africa, and Australia. Hb. Kew.

75. ORMOSIA.

Ormosia, Jacks. in Trans. Linn. Soc. x. p. 360; Benth. et Hook. Gen. Plant. i. p. 556.

Trees, or rarely shrubby. About twenty species, dispersed in Tropical America, Asia, and Africa.

1. **Ormosia coccinea,** Jacks. in Trans. Linn. Soc. x. p. 360, t. 25.

Panama, Rio Grande railway-station (*S. Hayes*, 352).—Guiana and North Brazil. Hb. Kew.

2. **Ormosia panamensis,** Benth. in Seem. Bot. Voy. 'Herald,' p. 111.

Panama, near the town of David (*Seemann*, 1673). Hb. Kew.

3. **Ormosia,** sp.

Panama, Paraiso railway-station (*S. Hayes*, 522). Hb. Kew.

76. ATELEIA.

Ateleia, Moç. et Sessé, ex DC. Mém. Lég. p. 395; Benth. et Hook. Gen. Plant. i. p. 558.

Two or three species, endemic in Central America and the Antilles.

1. **Ateleia pterocarpa,** Moç. et Sessé, ex DC. Mém. Lég. p. 394.

Mexico.

77. MYROXYLON.

Myroxylon, Linn. fil. Suppl. p. 34; Benth. et Hook. Gen. Plant. i. p. 558.

Six arboreous species restricted to America.

1. **Myroxylon pereiræ,** Klotzsch in Bonplandia, 1857, p. 274.

Myrospermum pereiræ, Royle.

South Mexico, Matlaluca, near Cordova (*Finck*); Guatemala, Esquintla (*S. Hayes*), Sonsonate (*Dr. C. Donati*). Hb. Kew.

2. **Myroxylon toluiferum,** H. B. K. Nov. Gen. et Sp. vi. p. 375.

Myroxylon punctatum, Kl. in Suppl. Hayne's Arzenei-Gew. xiv. t. 12.

Guatemala, without exact locality (*Skinner*).—North part of South America. Hb. Kew.

78. SWEETIA.

Sweetia, Spreng. Syst. Veg. ii. p. 171; Benth. et Hook. Gen. Plant. i. p. 559.

There are ten arboreous species, all peculiar to America, and chiefly to Brazil.

1. **Sweetia panamensis,** Benth. in Journ. Linn. Soc. viii. p. 263.

Panama, in woods, Paraiso railway-station (*S. Hayes*, 267). Hb. Kew.

Tribe SWARTZIEÆ.

With the exception of three species belonging to two genera in Tropical Africa, all the species of this tribe are American. It comprises only four genera of trees and tall shrubs.

79. SWARTZIA.

Swartzia, Schreb. Gen. Plant. p. 518; Benth. et Hook. Gen. Plant. i. p. 561.

Nearly sixty arboreous species, with the exception of one anomalous species, endemic in America.

1. **Swartzia grandiflora,** Willd. Sp. Pl. ii. p. 1200.

Swartzia simplicifolia, Willd.

Swartzia ochnacea, DC. Mém. Lég. p. 405, t. 58.

South Mexico, Acapulco (*Hinds*); Panama, Chagres (*Fendler*, 327).—West Indies and northern parts of South America. Hb. Kew.

2. **Swartzia myrtifolia,** Smith, in Rees's Cyclop. xxxiv.

Swartzia triphylla, DC. Prodr. (ex parte) nec Willd.

South Mexico, Teapa (*Linden*, 738); Panama, Obispo Falls (*S. Hayes*). Hb. Kew.

3. **Swartzia panamensis,** Benth. in Mart. Fl. Bras. fasc. 50, p. 38.

Swartzia pinnata, Willd.? Seem. Bot. Voy. 'Herald,' p. 113.

Panama, Bujio railway-station (*S. Hayes*), in woods around the Hacienda de Juan Sanas (*Seemann*, 224). Hb. Kew.

4. **Swartzia triphylla,** Willd. Sp. Pl. ii. p. 1220.

Swartzia parviflora, DC. Mém. Lég. p. 403, t. 60.

Panama, Isle of Taboga (*Seemann*, 1687).—Northern parts of South America. Hb. Kew.

Suborder II. *CÆSALPINIEÆ.*

Trees and shrubs, very few herbaceous.

Tribe SCLEROLOBIEÆ.

This tribe comprises ten genera and about thirty species, exclusively American and chiefly Brazilian; but only one has hitherto been found in Central America or Mexico.

80. PŒPPIGIA.

Pœppigia, Presl, Symb. Bot. i. p. 15; Benth. et Hook. Gen. Plant. i. p. 562.

Three arboreous forms, endemic in America, have been described; but Mr. Bentham would regard them as varieties of one widely diffused species.

1. **Pœppigia procera,** Presl, Symb. Bot. i. p. 16, t. 8.

Central America, without any more precise habitat (*Cuming*).—West Indies and Tropical South America. Hb. Kew.

Tribe EUCÆSALPINIEÆ.

There are sixteen genera of this tribe, generally diffused in the tropics, and extending to north temperate regions.

81. PELTOPHORUM.

Peltophorum, Vog. in Linnæa, xi. p. 406; Benth. et Hook. Gen. Plant. i. p. 565.

A genus of about six species, represented in America, Africa, Asia, and Australia by different species.

1. **Peltophorum,** sp.

Panama, Lion-Hill railway-station (*S. Hayes*). Hb. Kew.

82. CÆSALPINIA.

Cæsalpinia, Linn. Gen. Plant. n. 516; Benth. et Hook. Gen. Plant. i. p. 565.

About forty species of trees and shrubs generally dispersed in warm countries.

1. **Cæsalpinia** (§ **Cæsalpinaria**) **affinis,** Hemsley, Diag. Pl. Nov. pars 1, p. 8.

Foliis petiolatis bis paripinnatis pubescentibus, pinnis 4–5-jugis, foliolis parvis 4–6-jugis crebris oblongo-ellipticis obovatisve, floribus amplis subcarnosis dense racemosis, calycis lobis fere

æqualibus, petalo summo conduplicato fornicato quam cætera minore, filamentis quam petala duplo longioribus.

Frutex vel *arbor*, ramulis crassis. *Folia* petiolata, pubescentia, vix coriacea, bis paripinnata, ad 6-pollicaria; pinnæ 4–5-jugæ; foliola 4–6-juga, crebra, brevissime petiolulata, oblonga, elliptica vel obovata, 6–9 lin. longa, petiolis rhachibusque teretibus gracilibus. *Flores* ad sesquipoll. diametro, subcarnosi, glabri, longe pedicellati, racemosi, racemis densis, 3–5-pollicaribus; calyx 5-lobus, lobis fere æqualibus, oblongo-ellipticis, infimo retuso, cæteris apice rotundatis; petala inæqualia, summum conduplicatum, fornicatum, cæteris brevius; stamina 10, declinata, petalis duplo longiora, filamentis basi incrassatis, lanatis; ovarium velutinum, pauciovulatum, stylo filiformi, recurvo, staminibus æquilongo. *Legumen* ignotum.

GUATEMALA, without locality (*Skinner*). Hb. Kew.

Allied to *C. cacalaco*, H. B. K., but differing in its hairy leaves, nearly equal calyx-lobes, &c.

2. **Cæsalpinia bonducella,** Roxb. Fl. Ind. Or. ii. p. 357.

Cæsalpinia bonduc, Ait. nec Roxb.

Guilandina bonducella, Linn.

This plant is widely dispersed on the sea-shores of nearly all tropical countries, including SOUTH MEXICO, Papantla (*Schiede & Deppe*); COSTA RICA, Puntarenas (*Ærsted*); PANAMA (*Cuming*). Hb. Kew.

3. **Cæsalpinia cacalaco,** Humb. et Bonpl. Pl. Æquin. ii. p. 173, t. 137.

SOUTH MEXICO, Tehuacan, San Carlos, and Oaxaca (*Liebmann*), plateaus at 4000 to 5000 feet, Oaxaca (*Galeotti*, 3247), between the town of Chilpancingo and the village of Zumpango, 3000 feet (*Humboldt & Bonpland*). Hb. Kew.

4. **Cæsalpinia coriaria,** Willd. Sp. Pl. ii. p. 532.

Poinciana coriaria, Jacq. Am. t. 175. fig. 36.

SOUTH MEXICO, Tehuantepec (*Andrieux*, 408).—VENEZUELA, JAMAICA, TRINIDAD, and HAYTI. Hb. Kew.

5. **Cæsalpinia eriostachys,** Benth. in Seem. Bot. Voy. 'Herald,' p. 88.

COSTA RICA, Nicoya (*Hinds*); NICARAGUA, Segovia (*Ærsted*); SAN SALVADOR, port of Acajutla (*S. Hayes*, 459), without locality (*Wendland*). Hb. Kew.

6. **Cæsalpinia exostemma,** DC. Prodr. ii. p. 483; Calques des Dess. Fl. Mex. 218.

NICARAGUA (*Ærsted*); GUATEMALA (*Wendland*). Hb. Kew.

7. **Cæsalpinia (§ Coulteria) gracilis,** Benth. in Hemsley, Diag. Pl. Nov. pars 1, p. 9.

Fruticosa, glabra, ramulis rhachibusque foliorum gracillimis, foliis bis paripinnatis, pinnis trijugis, foliolis 3–4-jugis, floribus pedicellatis racemosis, racemis paucifloris, calyce furfuraceo, vexillo sessili, filamentis basi incrassatis barbatis.

Frutex, ramulis gracillimis. *Folia* glabra, petiolata, bis paripinnata, 3–4 poll. longa et lata, pinnæ distantes, trijugæ; foliola 3–4-juga, petiolulata, membranacea, elliptica vel fere orbiculata, 5–7

lin. longa, utrinque rotundata vel apice sæpius retusa, petiolulis semilin. longis, rhachibus gracillimis. *Flores* graciliter pedicellati, racemosi, polygami (?); racemi pauciflori, foliis oppositi brevioresque; calyx furfuraceus, segmento infimo multo majore fimbriato, cæteris spathulatis; vexillum sessile, villosum; stamina 12, filamentis basi incrassatis, barbatis; ovarium .... *Legumen* stipitatum, oblique oblongum, sesqui- usque bipollicare, fere membranaceum, dispermum, seminibus orbiculatis compressis.

North Mexico, Sonora Alta (*Coulter*, 485). Hb. Kew.

A very distinct species in its slender habit and few distant flowers.

8. **Cæsalpinia glabrata,** H. B. K. Nov. Gen. et Sp. vi. p. 326.

South Mexico, near Tantoyuca (*Ervendberg*, 229).—Peru.

9. **Cæsalpinia laxa,** Benth. Pl. Hartw. p. 60.

North Mexico, Monterey, Nuevo Leon (*Eaton & Edwards*); South Mexico, Teojomulco (*Hartweg*, 455). Hb. Kew.

10. **Cæsalpinia mexicana,** A. Gray, in Proc. Am. Acad. v. p. 157.

New Mexico; Lower California.—North Mexico, Chihuahua and Nuevo Leon (*Berlandier*), Monterey (*Eaton & Edwards*). Hb. Kew.

11. **Cæsalpinia pulcherrima,** Sw. Obs. p. 166.

Poinciana pulcherrima, Linn. Sp. Pl. p. 554; Bot. Mag. t. 995.

North Mexico, Ures, Sonora (*Schott*); South Mexico, valley of Cordova (*Bourgeau*, 2301), State of Mexico (*Andrieux*, 413), without localities (*Jurgensen*, *Bates*, *&c.*); Guatemala, Esquintla (*Velasquez*); Central America, without any more definite locality (*Barclay*).—Northern parts of South America, West Indies, Galapagos, and Sandwich Islands. Hb. Kew.

12. **Cæsalpinia,** sp.

South Mexico (*Beechey*); Nicaragua, Segovia (*Œrsted*). Hb. Kew.

13. **Cæsalpinia,** sp. (§ **Coulteria**).

South Mexico, Zimapan (*Coulter*, 873). Hb. Kew.

83. HOFFMANSEGGIA.

Hoffmanseggia, Cav. Ic. iv. p. 63; Benth. et Hook. Gen. Plant. i. p. 567.

About fifteen species of herbs or dwarf shrubs, with the exception of two in South-Africa, natives of America, chiefly of the western side, from Texas to Patagonia.

1. **Hoffmanseggia densiflora,** A. Gray, Pl. Wright. i. p. 55.

Texas; New Mexico, to—North Mexico, Chihuahua (*Potts*). Hb. Kew.

2. **Hoffmanseggia drummondii,** Torr. & Gray, Fl. N. Amer. i. p. 393.

Texas; New Mexico to—North Mexico, Matamoras to Goliad (*Berlandier*). Hb. Kew.

3. **Hoffmanseggia gladiata,** Benth. in A. Gray, Pl. Wright. i. p. 57, in adnot.
South Mexico, Zimapan (*Coulter*). Hb. Kew.

4. **Hoffmanseggia humilis,** Hemsley.
Pomaria humilis, Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 303.
South Mexico, damp places at 6000 to 7000 feet, Oaxaca (*Galeotti,* 3228). Hb. Kew.

5. **Hoffmanseggia melanosticta,** A. Gray, Pl. Wright. i. p. 54.
Pomaria melanosticta, Schauer in Linnæa, xx. p. 748.
North Mexico, Rinconada and Monterey, Nuevo Leon (*Edwards*), Buena Vista and in a valley near Azufrora (*Gregg*). Hb. Kew.

6. **Hoffmanseggia oxycarpa,** Benth. in A. Gray, Pl. Wright. i. p. 55.
Texas; New Mexico.—North Mexico, Monterey (*Eaton & Edwards*). Hb. Kew.

7. **Hoffmanseggia platycarpa,** Benth. in A. Gray, Pl. Wright. i. p. 57, in adnot.
Mexico (*Coulter*, 486). Hb. Kew.

8. **Hoffmanseggia stricta,** Benth. in A. Gray, Pl. Wright. i. p. 56.
Texas; New Mexico.—North Mexico, Zacatecas (*Coulter*, 488), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 202). Hb. Kew.

84. HÆMATOXYLON.

Hæmatoxylon, Linn. Gen. Plant. n. 525; Benth. et Hook. Gen. Plant. i. p. 567.

The genus is limited to this one arboreous species:—

1. **Hæmatoxylon campechianum,** Linn. Sp. Pl. p. 549; Hayne, Arzenei-Gew. ix. t. 44; Karst. Fl. Columb. t. 114.
South Mexico, Mazatlan (*Liebmann, Seemann*), Tehuantepec (*Liebmann*), Yucatan (*Johnson*); Nicaragua, Culebra (*Hinds*).—West Indies and States of Colombia. Hb. Kew.

85. SCHIZOLOBIUM.

Schizolobium, Vog. in Linnæa, xi. p. 399; Benth. et Hook. Gen. Plant. i. p. 569.

Besides the following there is one Brazilian species.

1. **Schizolobium,** sp.
Panama, in woods near Empire railway-station (*S. Hayes*, 584). Hb. Kew.

86. CERCIDIUM.

Cercidium, Tul. in Arch. Mus. Par. iv. p. 133; Benth. et Hook. Gen. Plant. i. p. 570.

Three or four shrubby and arboreous species, in Mexico, Central America, Venezuela, and Mendoza.

1. **Cercidium floridum,** Benth. in A. Gray, Pl. Wright. i. p. 58, in adnot.

TEXAS; CALIFORNIA.—NORTH MEXICO, Sonora Alta (*Coulter*, 489), Monterey (*Eaton & Edwards*), Cerralvo (*Wislizenus*), between Monterey and Matamoras (*Gregg*). Hb. Kew.

2. **Cercidium,** sp. (? *Cercidii spinosi* var.).

NICARAGUA, Tepitapa (*Œrsted*). Hb. Kew.

87. PARKINSONIA.

Parkinsonia, Linn. Gen. Plant. n. 513; Benth. et Hook. Gen. Plant. i. p. 570.

Four arboreous species, whereof two are endemic in Mexico and the adjoining countries to the north, one in South Africa, and the other is widely dispersed.

1. **Parkinsonia aculeata,** Linn. Hort. Cliff. p. 147, t. 13.

NORTH MEXICO, between Matamoras and Reynosa (*Gregg*), Sonora Alta (*Coulter*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 203); SOUTH MEXICO, Oaxaca and Guanaxuato (*Galeotti*, 3211; *Ghiesbreght*); NICARAGUA (*Œrsted*); COSTA RICA (*Œrsted*).—Widely dispersed in TROPICAL and SUBTROPICAL AMERICA and the WEST INDIES; commonly cultivated and naturalized in ASIA and AFRICA. Hb. Kew.

2. **Parkinsonia microphylla,** Torr. Pacif.-Railroad Rep. iv. p. 8.

CALIFORNIA.—NORTH MEXICO, Sonora Alta (*Coulter*, 490). Hb. Kew.

3. **Parkinsonia torreyana,** Watson, in Proc. Am. Acad. xi. p. 135.

Cercidium floridum, Torr. Pacif.-Railr. Rep. v. p. 360, t. 3, nec Benth.

CALIFORNIA.—MEXICO.

Tribe CASSIEÆ.

Besides *Cassia,* ten other genera are referred hither; they are chiefly trees and shrubs, and are generally dispersed in tropical countries.

88. CASSIA.

Cassia, Linn. Gen. Plant. n. 514; Benth. et Hook. Gen. Plant. i. p. 571; Benth. in Trans. Linn. Soc. xxvii.

Trees, shrubs, and herbs. About 340 species, generally dispersed in warm countries, but most numerous in America, extending from Massachusetts to Chili.

1. **Cassia alata,** Linn. Sp. Pl. p. 541.

Cassia herpetica, Jacq. Obs. ii. p. 24, t. 45. fig. 2.

NICARAGUA, Segovia (*Œrsted*); PANAMA, Empire railway-station (*S. Hayes*, 430).—Nearly all over the WEST INDIES and TROPICAL AMERICA; also common in Tropical ASIA and in Western AFRICA, though perhaps indigenous only in America. Hb. Kew.

2. **Cassia andrieuxii,** Benth. in Trans. Linn. Soc. xxvii. p. 548.

SOUTH MEXICO, in the State of Puebla (*Andrieux*, 414), without special locality (*Bates*). Hb. Kew.

3. **Cassia argentea,** H. B. K. Nov. Gen. et Sp. vi. p. 358.

SOUTH MEXICO, on the banks of the river Mescala (*Humboldt & Bonpland*).

4. **Cassia atomaria,** Linn. Mant. p. 68; Benth. in Trans. Linn. Soc. xxvii. p. 548.

Cassia nutans, Collad. Hist. Cass. t. 4.
Cassia mollissima, Humb. et Bonpl.

SOUTH MEXICO, without locality (*Jurgensen*); CENTRAL AMERICA, without locality (*Barclay*).—COLOMBIA to PERU. Hb. Kew.

Var. **glabrata,** Benth. in Trans. Linn. Soc. xxvii. p. 548.

NEW SPAIN (*Pavon*). Hb. Boiss.

5. **Cassia bacillaris,** Linn. fil. Suppl. p. 231; Fl. Bras. t. 31; Benth. in Trans. Linn. Soc. xxvii. t. 62.

Cassia puberula, H. B. K.

SOUTH MEXCO, in thickets near Vera Cruz (*Schiede & Deppe*), Yucatan and Tabasco (*Johnson*); NICARAGUA, Masaya (*Œrsted*); COSTA RICA, San José (*Polakowsky*); PANAMA, Chagres (*Fendler*, 82, 87).—And northern part of SOUTH AMERICA and WEST INDIES. Hb. Kew.

6. **Cassia bauhinioides,** A. Gray, Pl. Lindh. in Bost. Journ. Nat. Hist. vi. p. 180.

TEXAS; NEW MEXICO.—NORTH MEXICO, Chihuahua, Durango, and Sonora (ex *Torrey*), Chiricahui Mountains (*Wright*), Santa Rosa (*Gregg*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 206). Hb. Kew.

7. **Cassia berlandieri,** Benth. in Trans. Linn. Soc. xxvii. p. 520.

SOUTH MEXICO, Tula to Tampico (*Berlandier*, 2293 and 2294), between Boca del Potrero and Tolima (*Liebmann*, 35). Hb. Kew.

8. **Cassia bicapsularis,** Linn. Sp. Pl. p. 538; Benth. in Trans. Linn. Soc. xxvii. p. 525.

Cassia ovalifolia, Mart. et Gal.
Cassia alcaparillo, H. B. K.
Cassia sennoides, Jacq. Ic. Pl. Rar. t. 170.

NORTH MEXICO, San Luis Potosi to Tampico (*Palmer*, 1052); SOUTH MEXICO, Tepic (*Sinclair*), Cordillera of Vera Cruz at 3000 feet (*Galeotti*, 3260), valley of Cordova (*Bourgeau*, 1624), Yucatan and Tabasco (*Johnson*, 47); GUATEMALA, Volcan de Fuego, 5000 feet (*Salvin*); COSTA RICA (*Œrsted*); PANAMA (*Halsted*).—Southward to SOUTH BRAZIL and CHILI. Hb. Kew.

9. **Cassia biflora,** Linn. Sp. Pl. p. 540; Bot. Mag. t. 810; Bot. Reg. t. 1310.

Cassia acapulcensis, H. B. K.
Cassia geminiflora, Moç. et Sessé.
Cassia xiphoidea, Bertol.

SOUTH MEXICO, Acapulco (*Sinclair*), Potrero de Consoquitla (*Liebmann*); GUATEMALA

(*Wendland & Skinner*); NICARAGUA, between Realejo and Granada (*Ærsted*), Tigre Island, Gulf of Fonseca, &c. (*Sinclair*); COSTA RICA (*Ærsted*).—WEST INDIES and northern part of SOUTH AMERICA. Hb. Kew.

10. **Cassia botteriana,** Benth. Trans. Linn. Soc. xxvii. p. 542.

SOUTH MEXICO, Orizaba (*Botteri*, 784; *Bourgeau*, 3047), San Blas to Tepic (*Coulter*). Hb. Kew.

11. **Cassia brevipes,** DC. in Collad. Hist. Cass. p. 119, t. 9.

COSTA RICA, between Jaris and Pacaca (*Ærsted*); PANAMA, in stony places, meadows, &c. near the city of Panama (*Seemann*). Hb. Kew.

12. **Cassia calycioides,** DC. Prodr. ii. p. 503.

TEXAS.—MEXICO (*Berlandier*, 2036).—BRAZIL. Hb. Kew.

13. **Cassia chamæcrista,** Linn. Sp. Pl. p. 542; Benth. in Trans. Linn. Soc. xxvii. p. 576.

Cassia triflora, Jacq. Hort. Schœnb. t. 480.
Cassia pulchella, Salisb.

CANADA to—MEXICO, Cerro de Pinal (*Seemann*, 1528), Vilalpando (*Mendez*); GUATEMALA, Volcan de Fuego, Capetillo, 4600 feet (*Salvin*).—And southward to URUGUAY and BANDA ORIENTAL. Hb. Kew.

There is probably more than one species included under this name by Mr. Bentham.

14. **Cassia cinerea,** Ch. et Schl. in Linnæa, v. p. 559.

SOUTH MEXICO, Laguna Salada, Vera Cruz (*Liebmann*, 28), on the sandy sea-shore between Tecoluta and Villa Rica, common (*Schiede & Deppe*), on the Pacific coast of Oaxaca (*Galeotti*, 3408). Hb. Kew.

15. **Cassia crotalarioides,** Kunth, Mim. p. 132, t. 40.

Cassia apiculata, Mart. et Gal.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 206, 207); SOUTH MEXICO, Tehuacan (*Galeotti*, 3218), Zimapan (*Coulter*), between the mine of La Valencia and the city of Guanaxuato, 6600 feet (*Humboldt & Bonpland*).

Var. **leucophylla,** Benth. in hb. Kew.

NORTH MEXICO, Sonora Alta (*Coulter*). Hb. Kew.

16. **Cassia densiflora,** Mart. et Gal. in Bull. Acad. Brux. xii. p. 304.

SOUTH MEXICO, Guatulco, Oaxaca (*Liebmann*, *Galeotti*, 3188), without locality (*Jurgensen*). Hb. Kew.

17. **Cassia diphylla,** Linn. Sp. Pl. p. 537; Cav. Ic. t. 600.

SOUTH MEXICO, Mirador (*Linden*, 713), Cordillera of Vera Cruz, at 3000 feet (*Galeotti*), in meadows between Mesachica and Mapilque (*Schiede & Deppe*); GUATEMALA (*Friedrichsthal*); NICARAGUA, isle of Cordon, near Realejo (*Ærsted*), Volcan

el Viejo (*Ærsted*); Panama, Isle of Taboga (*Seemann*, 1035).—And common in the West Indies and Tropical South America. Hb. Kew.

18. **Cassia emarginata,** Linn. Sp. Pl. p. 538; Benth. in Trans. Linn. Soc. xxvii. p. 548.

Cassia canescens et *C. elliptica,* H. B. K.

South Mexico, Venta Salada, valley of Tehuacan (*Liebmann*, 63), Oaxaca (*Jurgensen*, 18), Campeche (*Humboldt & Bonpland*).—West Indies and northern part of South America. Hb. Kew.

[19. **Cassia fistula,** Linn. Sp. Pl. p. 540; Benth. in Trans. Linn. Soc. xxvii. p. 514.

Cassia fistuloides, Collad. Hist. Cass. t. 1.

A native of Tropical Asia and Africa. Sometimes planted in America, Vera Cruz (*Liebmann*), Campeche (*Humboldt & Bonpland*). Hb. Kew.]

20. **Cassia flexuosa,** Linn. Gen. Pl. p. 543; Breyn. Cent. t. 23.

Cassia arenaria, H. B. K.

Costa Rica, between Tortuga and Sapoa (*Ærsted*).—Southward to Uruguay. Hb. Kew.

21. **Cassia foliolosa,** Benth. in Trans. Linn. Soc. xxvii. p. 544.

Guatemala (*Skinner* in Hb. Lindley), ?Volcan de Fuego, 6500 feet (*Salvin*). Hb. Kew.

22. **Cassia galeottiana,** Martens in Bull. Acad. Brux. x. pars 2, p. 305.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 208); South Mexico, Oaxaca, cactus savannas, at 5500 feet (*Galeotti*, 3227), between Chalco and Gonacatepec (*Andrieux*, 421), between Acapulco and Tehuacan (*Liebmann*, 19). Hb. Kew.

23. **Cassia glandulosa,** Linn. Sp. Pl. p. 542; Benth. in Trans. Linn. Soc. xxvii. p. 576.

Cassia propinqua et *C. ramosissima,* H. B. K.

South Mexico, in meadows near Mesachica (*Schiede & Deppe*), Mount Jorullo (*Humboldt & Bonpland*).—Colombia to Peru, Guiana, and Brazil. Hb. Kew.

24. **Cassia grammica,** Spreng. Neue Entd. iii. p. 55.

Nicaragua, Volcan el Viejo (*Ærsted*).—Cuba.

25. **Cassia grandis,** Linn. fil. Suppl. p. 230; Benth. in Trans. Linn. Soc. xxvii. p. 515.

Cassia brasiliana, Lam.

Cathartocarpus brasilianus, Jacq. Fragm. p. 59, t. 85. fig. 3.

Panama, without special locality (*Seemann*).—West Indies; Colombia, Guiana, and Brazil. Hb. Kew.

26. **Cassia greggii,** A. Gray, Pl. Wright. i. p. 59.

North Mexico, Victoria de Tamaulipas (*Berlandier*), Monterey (*Eaton & Edwards*), near Rinconada, Cerralvo, and Monterey (*Gregg*), north of Monterey (*Wislizenus*). Hb. Kew.

27. **Cassia hirsuta,** Linn. Sp. Pl. p. 540; Benth. in Trans. Linn. Soc. xxvii. p. 534.
Cassia caracasana, Jacq. Hort. Schœnb. t. 270.

South Mexico (*Jurgensen*, 522), region of Orizaba (*Bourgeau*, 2816); Guatemala, llano below Volcan de Fuego (*Salvin & Godman*, 44).—Tropical South America. Hb. Kew.

28. **Cassia hispidula,** Vahl, Ecl. iii. p. 10; Benth. in Trans. Linn. Soc. xxvii. p. 559.
Cassia leiantha, Benth.
Cassia fagonioides, Vog.
Cassia lotoides, H. B. K.

South Mexico, Vera Cruz (*Linden, Liebmann*), between Vanila and Mazatlan, and Mirador (*Liebmann*); Costa Rica, Barba (*Œrsted*).—And northern part of South America. Hb. Kew.

29. **Cassia inæquilatera,** Balb. in DC. Prodr. ii. p. 490.

South Mexico, Trapiche de la Concepcion, Oaxaca (*Liebmann*, 32), without locality (*Hahn*).—Venezuela. Hb. Kew.

30. **Cassia lævigata,** Willd. Enum. Hort. Berol. p. 441; Benth. in Trans. Linn. Soc. xxvii. p. 527.
Cassia elegans, H. B. K.
Cassia herbertiana, Lindl. Bot. Reg. t. 1422.

California.—South Mexico, near Jalapa (*Schiede & Deppe, Galeotti*), Orizaba (*Botteri*, 713; *Bourgeau*, 2499, 2825); Costa Rica, Alajuela (*Polakowsky*).—Common in South America to Brazil; also widely spread in the tropics of the Old World, though probably introduced in most places. Hb. Kew.

31. **Cassia leiophylla,** Vog. Syn. Cass. p. 25.

Var. **? pubescens,** Benth. in Trans. Linn. Soc. xxvii. p. 542.
Cassia pumila, Mart. et Gal., nec DC.

South Mexico, Jalapa (*Galeotti*, 3312), valley of Cordova (*Bourgeau*, 1536); Nicaragua, Tortuga (*Œrsted*).—Peru. Hb. Kew.

The typical plant inhabits Brazil and Peru.

32. **Cassia leptocarpa,** Benth. in Linnæa, xxii. p. 528.

New Mexico.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 204), San Pedro, Sonora (*Wright*); South Mexico, valley of Cordova (*Bourgeau*, 1623); Costa Rica, San José (*Œrsted*).—And in South America to Brazil. Hb. Kew.

33. **Cassia liebmannii,** Benth. in Trans. Linn. Soc. xxvii. p. 549.

South Mexico, Santiago Estola, Oaxaca (*Liebmann*, 41). Hb. Kew.

34. **Cassia lindheimeriana,** Scheele in Linnæa, xxi. p. 457.

Texas.—North Mexico, Monterey, Nuevo Leon (*Plotz*), Sonora (*Schott*). Hb. Kew.

35. **Cassia mexicana,** Jacq. Hort. Schœnb. ii. t. 203.

South Mexico, Mirador (*Liebmann*, 90), without locality (*Parkinson*), region of Orizaba (*Bourgeau*, 2877).—San Domingo.

Var. **? grandiflora,** Benth. in Trans. Linn. Soc. xxvii. p. 530.

South Mexico, Vera Cruz to Orizaba (*Müller*), Alpatlahua (*Liebmann*, 91). Hb. Kew.

36. **Cassia mimosoides,** Linn. Sp. Pl. p. 543; Benth. in Trans. Linn. Soc. xxvii. p. 579.

Cassia æschynomene, DC. in Collad. Hist. Cassia, t. 17.

An exceedingly variable and widely diffused species both in Tropical America and the tropical countries of the Old World;—but apparently rare in Central America, and not seen from Mexico; Nicaragua, Volcan el Viejo (*Œrsted*). Hb. Kew.

37. **Cassia moschata,** H. B. K. Nov. Gen. et Sp. vi. p. 358; Benth. in Trans. Linn. Soc. xxvii. p. 516, t. 26.

Panama, Rio-Grande railway-station (*S. Hayes*).—Peru and Guiana. Hb. Kew.

38. **Cassia multiflora,** Mart. et Gal. in Bull. Acad. Brux. x. 2, p. 307.

South Mexico, damp woods, at 6000 to 7000 feet, near Oaxaca (*Galeotti*, 3169), Tehuacan (*Liebmann*, 88), between Chila and Huanapan (*Andrieux*, 416), Cuernavaca (*Bilimek*, 143); Guatemala, without habitat (*Wendland*). Hb. Kew.

39. **Cassia multijuga,** Rich. in Act. Soc. Hist. Nat. de Paris, p. 108; Benth. in Trans. Linn. Soc. xxvii. p. 546.

Cassia richardiana, Kunth, Mim. p. 139, t. 42.
Cassia selloi, Don, Gen. Syst. ii. p. 442.
Cassia magnifica, Mart. Fl. Bras. p. 106.
Cassia calliantha, Mey. Prim. Fl. Esseq. p. 169.

South Mexico, Jocotepec, Chinantla (*Liebmann*, 21).—A common species in South America to Tucuman and South Brazil. Hb. Kew.

40. **Cassia nicaraguensis,** Benth. in Trans. Linn. Soc. xxvii. p. 552.

South Mexico, Guatulco, Oaxaca (*Liebmann*, 87); Nicaragua, Segovia (*Œrsted*); Costa Rica, San José (*Œrsted*). Hb. Kew.

41. **Cassia nictitans,** Linn. Sp. Pl. p. 543; Benth. in Trans. Linn. Soc. xxvii. p. 578.

In North America from Indiana and Pennsylvania to—South Mexico, Guatulco, Oaxaca (*Liebmann*, 31).—Also in the West Indies, Guiana, and Venezuela. Hb. Kew.

42. **Cassia occidentalis,** Linn. Sp. Pl. p. 539; Bot. Reg. t. 83; Benth. in Trans. Linn. Soc. xxvii. p. 532.

Florida and Louisiana to—Mexico, between Oaxaca and Mitla (*Andrieux*, 417), valley of Cordova (*Bourgeau*, 1800); Nicaragua, Graytown (*Tate*, 40); Panama, Chagres (*Fendler*, 85).—And southward to Chili and Uruguay; also in Tropical Asia and Africa, though possibly of American origin. Hb. Kew.

43. **Cassia oxyphylla,** Kunth, Mim. p. 129, t. 39; Benth. in Trans. Linn. Soc. xxvii. p. 521.

Cassia hartwegii, Benth.

Cassia fagifolia, Bertol.

South Mexico, Chinantla, Oaxaca (*Liebmann*; *Jurgensen*, 724); Guatemala, Volcan de Fuego, Barranca Honda, 3800 feet (*Salvin*); Costa Rica, Aguacate (*Œrsted*); Panama, Chagres (*Fendler*, 88), Panama railway-station (*S. Hayes*, 403).—Colombia and Venezuela. Hb. Kew.

44. **Cassia patellaria,** DC. in Collad. Hist. Cass. p. 125, t. 16.

Texas.—South Mexico, Orizaba (*Botteri*, 668; *Bourgeau*, 2673); Nicaragua, Masaya (*Œrsted*); Costa Rica (*Œrsted*).—Also in the West Indies and South America. Hb. Kew.

45. **Cassia pauciflora,** H. B. K. Nov. Gen. et Sp. vi. p. 360.

Cassia camporum, Benth.

Cassia punctata, Hook. et Arn.

North Mexico, Cerro de Pinal (*Seemann*, 1537); South Mexico, near La Venta del Peregrino (*Humboldt & Bonpland*), Tepic (*Beechey*); Nicaragua, Realejo (*Hinds*).—Brazil. Hb. Kew.

46. **Cassia pentagonia,** Mill. Dict. ed. 8, no. 18; Benth. in Mart. Fl. Bras. p. 114, t. 34.

Central America.—Brazil.

47. **Cassia pilifera,** Vog. Syn. Cass. p. 23; Benth. in Trans. Linn. Soc. xxvii. p. 536.

Cassia maritima, Willd.

Panama, Paraiso railway-station (*S. Hayes*, 531), without locality (*Seemann*, 226).—Southward to South Brazil. Hb. Kew.

48. **Cassia polyantha,** Moç. et Sessé in Collad. Hist. Cass. p. 112, t. 2.

Cassia browniana, Kunth, Mim. t. 41.

South Mexico, Mitla, near Oaxaca (*Andrieux*, 419, 420), San Sebastian (*Hartweg*), without locality (*Jurgensen*, 705). Hb. Kew.

49. **Cassia procumbens,** Linn. Herb. et Sp. Pl. p. 543, ex parte; Benth. in Trans. Linn. Soc. xxvii. p. 578.

Cassia pygmæa, DC.

Texas.—South Mexico, Vera Cruz (*Houston*); Costa Rica (*Œrsted*).—San Domingo; Cuba. Hb. Kew.

50. **Cassia pumilio,** A. Gray, Pl. Lindh. in Bost. Journ. Nat. Hist. vi. p. 180.

Texas; New Mexico.—North Mexico, San Luis Potosi to San Antonio (*Parry*, 210). Hb. Kew.

51. **Cassia reticulata,** Willd. Enum. Hort. Berol. p. 443; Benth. *l. c.* p. 550.

Cassia strobilacea et *Cassia tarantan,* H. B. K.

South Mexico, Yucatan and Tabasco (*Johnson*); Nicaragua, Tortuga (*Œrsted*);

Panama, Chagres (*Fendler*, 95), near the city of Panama (*S. Hayes*),—to Peru and North Brazil. Hb. Kew.

52. **Cassia riparia,** H. B. K. Nov. Gen. et Sp. vi. p. 369.

Cassia parkeriana, DC.

Central America.—West Indies; Guiana; North Brazil.

53. **Cassia rotundifolia,** Pers. Syn. i. p. 456; Benth. in Trans. Linn. Soc. xxvii. p. 570.

Mexico, Talisco (*Beechey*), Jorullo (*Humboldt & Bonpland*), region of Orizaba (*Bourgeau*, 3368).—Widely spread in South America, southward to Uruguay.

Var. **bauhiniæfolia,** Kunth, Mim. t. 37 (species).

Cassia fabaginæfolia, H. B. K.

North Mexico, Cerro de Pinal (*Seemann*).—Also in the West Indies. Hb. Kew.

54. **Cassia sericea,** Sw. Fl. Ind. Occ. p. 724; Benth. in Trans. Linn. Soc. xxvii. p. 536.

Cassia sensitiva, Jacq. Ic. Rar. t. 459.

Texas.—North Mexico, San Luis Potosi to Tampico (*Palmer*, 1058); South Mexico, Tula to Tampico (*Berlandier*, 2327), near Actopan (*Schiede & Deppe*); Central America (*Beechey*).—West Indies and North Brazil. Hb. Kew.

55. **Cassia serpens,** Linn. Sp. Pl. p. 541, nec Vogel.

Cassia prostrata, H. B. K.

South Mexico, savannas near the Pacific Ocean, Oaxaca, at 1000 feet (*Galeotti*, 3183); Nicaragua, Realejo (*Hinds*).—West Indies and north part of South America. Hb. Kew.

56. **Cassia skinneri,** Benth. in Trans. Linn. Soc. xxvii. p. 542.

Guatemala (*Skinner*), Dueñas (*Salvin & Godman*). Hb. Kew.

57. **Cassia sophera,** Linn. Sp. Pl. p. 542; Benth. in Trans. Linn. Soc. xxvii. p. 532.

Central America.—West Indies; north part of South America; also in Tropical Asia, Africa, and Australia, but probably introduced in some places. Hb. Kew.

58. **Cassia spectabilis,** DC. Cat. Hort. Monsp. p. 90; Collad. Hist. Cass. t. 7.

Cassia humboldtiana, DC.

Cassia speciosa, H. B. K., nec Schrad.

South Mexico, Tantoyuca (*Ervendberg*), Potrero, valley of Cordova (*Bourgeau*, 1755); Costa Rica, Puntarenas (*Œrsted*).—West Indies and northern part of South America. Hb. Kew.

59. **Cassia stenocarpa,** Vog. Syn. Cass. p. 68.

Nicaragua, Segovia (*Œrsted*).—South America on the eastern side to Uruguay. Hb. Kew.

60. **Cassia tagera,** Linn. Sp. Pl. p. 538; Benth. in Trans. Linn. Soc. xxvii. p. 570.
Cassia kunthiana, Ch. et Schl.

South Mexico, Tolipa and Mirador (*Liebmann*, 83, 84), Cordillera of Vera Cruz, at 3000 feet (*Galeotti*, 3291; *Linden*, 1312), Orizaba (*Botteri*, 574, 691), hills near Hacienda de la Laguna (*Schiede & Deppe*), valley of Cordova (*Bourgeau*, 2289); Costa Rica (*Œrsted*); Panama, in meadows near the city of Panama (*Seemann*, 217).—And north part of South America. Hb. Kew.

61. **Cassia tomentosa,** Linn. fil. Suppl. p. 231.
Cassia multiglandulosa, Jacq. Ic. Rar. i. t. 72.

South Mexico, valley of Mexico (*Bourgeau*, 324); Central America.—Colombia and Brazil; also in Tropical Asia and South Africa, where, however, it is doubtfully indigenous. Hb. Kew.

62. **Cassia tora,** Linn. Sp. Pl. p. 538; Benth. in Trans. Linn. Soc. xxvii. p. 535.
Cassia humilis, Collad.

Southern States of North America.—South Mexico, Guatulco (*Liebmann*), on sandy hills near Vera Cruz (*Schiede & Deppe*), Cuernavaca (*Bourgeau*, 1194); Nicaragua (*Œrsted*); Panama, Chagres (*Fendler*, 92).—And common in South America to Uruguay. Hb. Kew.

63. **Cassia tristicula,** H. B. K. Nov. Gen. et Sp. vi. p. 367.
Cassia flavicoma, Benth.
Cassia rusa, Mart. et Gal.

South Mexico, Orizaba (*Botteri*, 445, 667; *Bourgeau*, 2866), Mirador (*Linden*, 686; *Liebmann*, 27; *Schiede*), Zimapan (*Coulter*); Costa Rica, San José (*Polakowsky*); Panama, Paraiso railway-station (*S. Hayes*).—Colombia. Hb. Kew.

64. **Cassia undulata,** Benth. in Hook. Journ. Bot. ii. p. 76.

Panama, Chagres (*Fendler*, 86), without localities (*Seemann*, 453; *Sinclair*).—West Indies and north part of South America. Hb. Kew.

65. **Cassia villosa,** Mill. Dict. ed. 8, n. 4; Benth. in Trans. Linn. Soc. xxvii. p. 536; Hook. Ic. Pl. t. 106.
Cassia astroites, Ch. et Schl.

South Mexico, Tehuantepec (*Andrieux*, 418), between Santiago Estata and Vamba, Oaxaca (*Liebmann*, 20), Plan del Rio (*Schiede & Deppe*). Hb. Kew.

66. **Cassia virgata,** Sw. Fl. Ind. Occ. ii. p. 728.
Cassia glandulosa, Hook. Bot. Mag. t. 3435.

Guatemala, Baño de los Padres (*Bernoulli*, 296).—Colombia; Guiana; and common throughout the West Indies. Hb. Kew.

67. **Cassia vogeliana,** Schl. in Linnæa, xii. p. 342.

South Mexico, Zimapan (*Coulter*; *Galeotti*, 3372), Regla and Aguas Calidas (*Ehrenberg*). Hb. Kew.

68. **Cassia wislizeni,** A. Gray, Pl. Wright. i. p. 60.

Texas; New Mexico.—North Mexico, San Bernardino, Sonora (*Thurber*), Agua Pireta (*Wright*); South Mexico, between Tampico and Real del Monte (*Berlandier*). Hb. Kew.

69. **Cassia wrightii,** A. Gray, Pl. Wright. ii. p. 50.

New Mexico.—North Mexico, Sonora (*Wright, Schott*). Hb. Kew.

70. **Cassia,** sp.

South Mexico, region of Orizaba (*Bourgeau*, 2875). Hb. Kew.

71. **Cassia,** sp.

South Mexico, Cacahuamilpa (*Bilimek*, 141). Hb. Kew.

72. **Cassia,** sp. (? *C. chamæchristæ* var.)

Guatemala, Capetillo, Volcan de Fuego (*Salvin*). Hb. Kew.

73. **Cassia,** sp.

Panama, islands, bay of Panama (*Hinds*), dense woods near the city of Panama (*S. Hayes*, 694). Hb. Kew.

74. **Cassia,** sp.

Nicaragua, Chontales (*Tate*, 118). Hb. Kew.

Tribe BAUHINIEÆ.

Bauhinia and two other genera constitute this tribe.

89. BAUHINIA.

Bauhinia, Linn. Gen. Plant. n. 511; Benth. et Hook. Gen. Plant. i. p. 575.

About 130 species of trees and shrubs, generally dispersed in the tropics, rarer in subtropical regions.

1. **Bauhinia (§ Pauletia) andrieuxii,** Hemsl. Diag. Pl. Nov. pars. 3, p. 48.

Puberula, ramis tuberculatis, foliis parvis suborbicularibus bilobatis 9-nerviis, floribus mediocribus, calyce spathaceo, petalis late ellipticis brevissime unguiculatis, staminibus omnibus perfectis, filamentis (fere liberis) glabris alternis brevioribus, ovario hirsuto, legumine breviter stipitato, immaturo lineari ferrugineo-tomentoso.

Frutex dense ramosus, ramis brevibus, graciliusculis, tuberculatis, primum puberulis, internodiis quam folia multo brevioribus. *Folia* petiolata, bilobata, vix coriacea, orbiculari-cordiformia, maxima sesquipoll. diametro, 8 lineas longa, 11-nervia, subtus pubescentia, supra glabra; stipulæ minutæ, cito deciduæ. *Flores* mediocres, racemosi; racemi extraaxillares, oppositifolii, 3–4-flori; pedicelli 2–3 lineas longi; calyx pubescens, spathaceus; petala brevissime unguiculata, late elliptica, ad 8 lineas longa, venosa, extus apicem versus leviter hirsuta; stamina 10, omnia perfecta, filamentis fere liberis glabris tenuibus, alternis brevioribus; ovarium breviter stipitatum, hirsutum. *Legumen* immaturum lineare, vix tripollicare, dense ferrugineo-tomentosum.

South Mexico, neighbourhood of Oaxaca (*Andrieux*, 411). Hb. Kew.

2. **Bauhinia columbiensis,** Vog. in Linnæa, xiii. p. 313.

Panama, island of Coiba (*Seemann*).—Colombia.

3. **Bauhinia** (§ **Casparia**) **dipetala,** Hemsley, Diag. Pl. Nov. pars 3, p. 48.

Glabrescens, foliis graciliter petiolatis cordiformibus bilobatis, lobis obtusissimis, floribus parvis, calyce basi tubuloso spathaceo, petalis 2 parvis barbatis, staminibus 9 sterilibus fere ad apicem connatis tubo intus hirsuto, stamine 1 perfecto longe exserto, filamento incrassato glabro, anthera magna, ovario longe stipitato hirsuto, legumine glabro nitido tenuiter coriaceo semipedali et ultra.

Frutex vel *arbor*, ramis crassiusculis, teretibus, cito glabris. *Folia* graciliter petiolata, membranacea, cordiformia vel basi rotundata, sine petiolo $2\frac{1}{2}$–$3\frac{1}{2}$-pollicaria, glaberrima, 9-nervia, bilobata, inter lobos aristulata, lobis ad pollicaribus obtusissimis vel rotundatis, petiolo 1–$1\frac{1}{2}$-pollicari, basi et apice incrassato; stipulæ minutæ, valde deciduæ. *Flores* parvi, racemosi, breviter pedicellati; racemi densi, extraaxillares, $1\frac{1}{2}$–3-pollicares; calyx ad 10 lineas longus, glaber vel puberulus, basi tubulosus, spathaceus, dentibus parvis, subulatis; petala 2 lateralia tantum evoluta, linearia, ad 3 lineas longa, barbata; stamen 1 perfectum longe exsertum, filamento incrassato, glabro, sesquipollicari, anthera magna, leviter barbata; stamina 9 sterilia brevia, fere ad apicem connata, tubo intus hirsuto; ovarium longe stipitatum, hirsutum. *Legumen* glabrum, nitidum, planum, tenuiter coriaceum, $5\frac{1}{2}$–$6\frac{1}{2}$ poll. longum, 6–7 lineas latum, stipite ad 10 lineas longo.

South Mexico, valley of Cordova (*Bourgeau*, 1713, 2197). Hb. Kew.

4. **Bauhinia excisa,** Hemsl.

Schnella excisa, Griseb. Fl. Brit. W. Ind. p. 214.

Panama (ex *Grisebach*).—Trinidad.

5. **Bauhinia heterophylla,** Kunth, Mim. t. 46; H. B. K. Nov. Gen. et Sp. vi. p. 319.

Panama (*Seemann*, 222).—West Indies and Venezuela. Hb. Kew.

6. **Bauhinia** (§ **Schnella**) **hymenææfolia,** Triana, MSS. in Hb. Kew.

Foliis graciliter petiolatis glaberrimis cordiformibus bifoliolatis, foliolis oblique ovatis vel oblongis, floribus amplis, calycis tubo latissimo 15-costato, dentibus parvis ovato-oblongis, petalis oblongis deorsum attenuatis extus densissime sericeo-ferrugineo-tomentosis, staminibus 10 liberis, 5 antheriferis, antheris barbatis, filamentis filiformibus glabris, ovario sessili dense hirsuto.

Frutex alte scandens, ramis crassis, primum puberulis. *Folia* graciliter petiolata, cordiformia, bifoliolata; foliola coriacea, oblique ovato-oblonga, 2–3-pollicaria, obtusa, cito glaberrima, sæpe nitida, 5-nervia, petiolo 2–3-pollicari, basi et apice incrassato et puberulo; stipulæ a nobis non visæ. *Flores* albi, ampli, racemosi, breviter pedicellati; racemi terminales et laterales, pauciflori; calycis puberuli tubus ventricosus, ad 7 lineas latus et altus, 15-costatus; lobi parvi, ovato-oblongi; petala oblonga, sesquipollicaria et ultra, deorsum attenuata, extus densissime sericeo-ferrugineo-tomentosa; stamina omnia libera, 5 antherifera, antheris barbatis, filamentis filiformibus glabris; ovarium sessile, dense hirsutum. *Legumen* ignotum.

Panama, in woods, Paraiso railway-station (*S. Hayes*, 635).—Colombia. Hb. Kew.

7. **Bauhinia inermis,** Pers. Ench. i. p. 455.

Pauletia inermis, Cav. Ic. v. t. 409.

South Mexico, Acapulco (*Sinclair*), valley of Cordova (*Bourgeau*, 1712); Nicaragua,

Gulf of Fonseca (*Sinclair*), Realejo (*Hinds*); Costa Rica, Puntarenas (*Ærsted*); Panama, Remedios (*Seemann*). Hb. Kew.

8. **Bauhinia latifolia,** Cav. Ic. v. p. 4, t. 405.

South Mexico, Acapulco (*Barclay*, *Beechey*, *Sinclair*), Zimapan (*Coulter*), San Carlos, Oaxaca (*Liebmann*, 112), Vera Cruz (*Linden*, 1319), without habitat (*Jurgensen*, 459), valley of Cordova (*Bourgeau*, 2119). Hb. Kew.

9. **Bauhinia leptopetala,** DC. Prodr. ii. p. 513; Calques des Dess. Fl. Mex. 223.

Mexico.

10. **Bauhinia lunaria,** Cav. Ic. v. p. 4, t. 407.

South Mexico, Acapulco.

Reported also as growing in the Philippine Islands, but doubtless through some misplacement of labels.

11. **Bauhinia (§ Casparia) macranthera,** Benth. MSS. in Hb. Kew.

Pubescens, ramis flexuosis, internodiis brevissimis, foliis suborbicularibus ad medium bilobatis 9-nerviis, floribus majusculis, petalis longe unguiculatis, unguibus barbatis, staminibus omnibus fere liberis, 1 tantum perfecto, filamento elongato vix incrassato, anthera maxima, cæteris brevibus barbatis, ovario valde ferrugineo-tomentoso, legumine glaberrimo elongato sursum sensim dilatato.

Frutex, ramis crassiusculis, primum ferrugineo-pubescentibus, internodiis brevissimis (2–4 lineas longis). *Folia* petiolata, suborbicularia, maxima 2 poll. diametro, subcoriacea, ad medium bilobata, 9-nervia, supra glabra, subtus præcipue secus nervos pubescentia, lobis rotundatis, petiolo 3–6 lineas longo. *Flores* majusculi, extraaxillares, subsolitarii, breviter pedicellati; calyx ferrugineus, pubescens, fere pollicaris, spathaceus, dentibus subulatis; petala longissime graciliterque unguiculata, usque 15 lineas longa, ungue barbato, limbo ovato vel elliptico; stamina omnia fere libera, 1 tantum perfectum, filamento elongato vix incrassato, anthera maxima leviter barbata; stamina 9 sterilia brevia, barbata; ovarium longe stipitatum, valde ferrugineo-tomentosum. *Legumen* coriaceum, glabrum, superne latius, planum, leviter curvatum, ad 5 poll. longum.

South Mexico, Zimapan (*Coulter*). Hb. Kew.

12. **Bauhinia mexicana,** Vog. in Linnæa, xiii. p. 299.

South Mexico, Papantla (*Schiede*).

13. **Bauhinia pauletia,** Pers. Ench. p. 455; DC. Prodr. ii. p. 513.

Pauletia aculeata, Cav. Ic. v. p. 6, t. 410.
Bauhinia parvifolia, Seem.
Bauhinia panamensis, Spreng.

? South Mexico, Tehuacan (*Liebmann*, 96), Oaxaca (*Ghiesbreght*); Nicaragua, neighbourhood of Granada (*Levy*); Panama, Paraiso railway-station (*S. Hayes*, 268), in meadows near the city of Panama (*Seemann*, 223). Hb. Kew.

14. **Bauhinia pes-capræ,** Cav. Ic. v. p. 3, t. 404.

Casparia pes-capræ, H. B. K.

South Mexico, Acapulco, on the sea-shore (*Humboldt & Bonpland*; *Hinds*). Hb. Kew.

15. **Bauhinia** (§ **Casparia**) **platypetala,** Benth. MS. in hb. Kew.

Ferrugineo-tomentosa, foliis suborbicularibus basi profunde cordatis apice emarginatis vel leviter bilobatis, floribus amplis, calyce spathaceo, petalis sessilibus glabris lanceolato-oblongis, staminibus omnibus fere liberis, 3 perfectis, antheris oblongo-linearibus æqualibus, filamento tamen infimo duplo longiore et crasso carnoso, ovario ferrugineo-tomentoso, legumine immaturo puberulo ad suturas marginato.

Frutex, ferrugineo-tomentosus, ramis graciliusculis, internodiis quam folia brevioribus. *Folia* petiolata, coriacea, suborbicularia, 1½–2 poll. diametro, basi cordata, apice emarginata vel leviter bilobata, 9-nervia, supra glabra, opaca, subtus præcipue secus nervos insigniter elevatos pubescentia, petiolo gracili, 8–15 lineas longo; stipulæ et bracteæ subulatæ, persistentes. *Flores* ampli, racemosi; racemi extraaxillares, oppositifolii, 4–6-flori; calyx ferrugineo-tomentosus, spathaceus, 7–8 lineas longus; petala sessilia, glabra, lanceolata, pollicaria et ultra, infimum obovatum, rotundatum, cætera acute acuminata; stamina omnia fere libera, 3 perfecta, antheris oblongo-linearibus æqualibus, filamento tamen infimo duplo longiore et crasso-carnosa; filamentum sterilium basi tantum hirsutum; ovarium longe stipitatum, ferrugineo-tomentosum. *Legumen* immaturum puberulum, lineare, ad 3½ poll. longum, marginatum.

South Mexico, Zimapan (*Coulter*, 531). Hb. Kew.

16. **Bauhinia porrecta,** Sw. Prodr. p. 66; Plum. ed. Burm. t. 44. fig. 2; Bot. Mag. t. 1708.

South Mexico, neighbourhood of Campeche (*Linden*), Yucatan and Tabasco (*Johnson*), Oaxaca (*Andrieux*, 412), Papantla (*Liebmann*, 101).—West Indies. Hb. Kew.

17. **Bauhinia** (§ **Casparia**) **ramosissima,** Benth. MS. in hb. Kew.

Glabrescens, foliis parvis bifoliolatis, foliolis oblique oblongis obtusis trinerviis, petalis longe unguiculatis, unguibus hirsutis, staminibus omnibus fere liberis, 1 tantum perfecto, anthera magna, filamento glabro crasso-carnoso quam cætera triplo longiore, 9 sterilibus parvis, filamentis intus barbatis, ovario hirsuto, legumine parvo glabro plano ad suturas marginato longe mucronato.

Frutex, dense ramosus, ramis brevibus primum ferrugineo-puberulis, internodiis quam folia multo brevioribus. *Folia* petiolata, subcoriacea, cordiformia, bifoliolata, inter foliola aristata; foliola oblique ovato-oblonga, maxima vix pollicaria, utrinque rotundata, omnino glaberrima, 3-nervia, tenuiter reticulato-venosa, petiolo gracili, puberulo, usque 6 lineas longo; stipulæ minutæ, mox deciduæ. *Flores* racemosi; racemi extraaxillares, breves, 3–6-flori; calyx glabrescens, spathaceus, 8–10 lineas longus; petala longe graciliterque unguiculata, usque 15 lineas longa, ungue barbato, limbo late elliptico; stamina 10, omnia fere libera, 1 tantum perfectum, anthera magna, glabra, filamento glabro, crasso-carnoso, quam cætera triplo longiore; stamina 9 sterilia parva, filamentis intus barbatis; ovarium longe stipitatum, hirsutum. *Legumen* coriaceum, glabrum, planum, ad suturas marginatum, ad tripollicare, longe mucronatum.

South Mexico, Zimapan (*Coulter*, 473). Hb. Kew.

18. **Bauhinia schlechtendaliana,** Mart. et Gall. in Bull. Acad. Brux. x. pars 2, p. 308.

South Mexico, ravines of the Rio de las Vueltas, near Oaxaca, 3000 feet (*Galeotti*, 3239).

19. **Bauhinia spathacea,** DC. Prodr. ii. p. 512; Calques des Dess. Fl. Mex. 224.

Mexico.

20. **Bauhinia splendens,** H. B. K. Nov. Gen. et Sp. vi. p. 321; Griseb. Fl. Brit. W. Ind. p. 214.

Schnella splendens, Benth.

Panama, island of Coiba (*Seemann*, 625).—Caribbean Islands, Guadaloupe, Guiana, and North Brazil. Hb. Kew.

21. **Bauhinia suaveolens,** H. B. K. Nov. Gen. et Sp. vi. p. 320.

Panama (*Hinds*, *Œrsted*).—Colombia and Venezuela. Hb. Kew.

22. **Bauhinia subrotundifolia,** Cav. Ic. v. p. 4, t. 406.

South Mexico, Acapulco (*Beechey*, *Barclay*). Hb. Kew.

This is also said to be a native of the Philippine Islands; but it is improbable that it is indigenous in both countries.

23. **Bauhinia (§ Casparia) unguicularis,** Benth. MS. in hb. Kew.

Glabrescens, foliis mediocribus bifoliolatis, foliolis oblique ovatis vel oblongis subtrinerviis, floribus majusculis, petalis longissime unguiculatis, unguibus valde barbatis, staminibus 12 (an semper?) 1 perfecto filamento elongato crassiusculo, anthera maxima, cæteris brevissimis, filamentis basi valde lobatis connatis, ovario longe stipitato pubescente.

Frutex, dense ramosus, ramis graciliusculis, primum puberulis, internodiis brevibus. *Folia* petiolata, cordiformia, bifoliolata; foliola vix coriacea, ovato-oblonga, 1–2-pollicaria, utrinque rotundata, glabra, 3-nervia, petiolo 6–8 lineas longo. *Flores* majusculi, racemosi; racemi extraaxillares, 4–6-flori; pedicelli 3–4 lin. longi; calyx puberulus, spathaceus, ad 10 lineas longus; petala longissime graciliterque unguiculata, usque 15 lineas longa, ungue barbato, limbo orbiculari venoso; stamina (an semper?) 12, quorum 1 tantum perfectum, filamento elongato, crassiusculo, anthera maxima glabra; stamina 11 sterilia brevissima, filamentis basi connatis et valde barbatis; ovarium longe stipitatum, pubescens. *Legumen* a nobis non visum.

South Mexico, Zimapan (*Coulter*, 472). Hb. Kew.

24. **Bauhinia,** sp.

South Mexico, Yucatan and Tabasco (*Johnson*). Hb. Kew.

90. CERCIS.

Cercis, Linn. Gen. Plant. n. 510; Benth. et Hook. Gen. Plant. i. p. 576.

Three or four arboreous and shrubby species, inhabiting South Europe, Temperate Asia to Japan, and North America.

1. **Cercis occidentalis,** Torr. et Gr. Pl. Lindh. p. 177; Bot. Wilkes's Exp. p. 283, t. 3.

Cercis californica, Benth.

Texas; California.—North Mexico.

Tribe AMHERSTIEÆ.

About twenty-four genera of chiefly large trees, generally dispersed in tropical countries.

91. TAMARINDUS.

Tamarindus, Linn. Gen. Plant. n. 46; Benth. et Hook. Gen. Plant. i. p. 581.

One arboreous species, now widely dispersed in tropical countries, indigenous in Africa and North Australia, and perhaps also in Asia, but introduced into America.

[1. **Tamarindus indica,** Linn. Sp. Pl. p. 48; DC. Mém. Lég. p. 11, t. 24. fig. 113.

South Mexico, Pochutla, Oaxaca (*Liebmann*, 17); Panama, Isle of Taboga (*Hinds*). —Abundant in the West Indies. Hb. Kew.]

92. HYMENÆA.

Hymenæa, Linn. Gen. Plant. n. 512; Benth. et Hook. Gen. Plant. i. p. 583.

Eight arboreous species, restricted to America.

1. **Hymenæa candolleana,** H. B. K. Nov. Gen. et Sp. vi. p. 323, t. 566.
South Mexico, near Acapulco (*Humboldt & Bonpland*).

2. **Hymenæa courbaril,** Linn. Sp. Pl. p. 537; Gaertn. Fruct. ii. p. 305, t. 145. fig. 1.

South Mexico, Guatulco, Oaxaca (*Liebmann*, 94), valley of Cordova (*Bourgeau*, 2044); Guatemala (*Velasquez*); Costa Rica, Aguacate (*Œrsted*); Panama, near the city of Panama (*Seemann*, 531).—Also widely dispersed in the West Indies and Tropical South America. Hb. Kew.

93. CRUDYA.

Crudya, Schreb. Gen. Plant. p. 282; Benth. et Hook. Gen. Plant. i. p. 584.

About ten arboreous species, of which one is a native of Tropical Africa, one of Ceylon, one of the Indian archipelago, and the rest of America.

1. **Crudya acuminata,** Benth. Bot. Voy. Sulph. p. 89.
Central America (*Barclay*). Hb. Kew.

Tribe CYNOMETREÆ.

This tribe is also generally dispersed in the tropics, and comprises ten genera of trees and shrubs.

94. COPAIFERA.

Copaifera, Linn. Gen. Plant. n. 542; Benth. et Hook. Gen. Plant. i. p. 585.

A genus of twelve or fourteen arboreous or shrubby species, four of which are Tropical-African and the remainder American.

1. **Copaifera officinalis,** Linn. Sp. Pl. p. 557; Jacq. Amer. t. 86.

NICARAGUA, neighbourhood of Granada (*Levy*, 363); PANAMA (*S. Hayes*).—ST. VINCENT; TRINIDAD; VENEZUELA. Hb. Kew.

95. PRIORIA.

Prioria, Griseb. Fl. Brit. W. Ind. p. 215; Benth. et Hook. Gen. Plant. i. p. 585.

Limited to this one arboreous species.

1. **Prioria copaifera,** Griseb. Fl. Brit. W. Ind. p. 215; Trans. Linn. Soc. xxiii. t. 40.

PANAMA, Barbacoas (*S. Hayes*).—JAMAICA. Hb. Kew.

96. CYNOMETRA.

Cynometra, Linn. Gen. Plant. n. 519; Benth. et Hook. Gen. Plant. i. p. 586.

About twenty species of shrubs and trees, generally dispersed in the tropics.

1. **Cynometra bauhiniæfolia,** Benth. in Hook. Journ. Bot. ii. p. 99.

PANAMA, Paraiso railway-station (*S. Hayes*, 29).—GUIANA; BRAZIL. Hb. Kew.

Tribe DIMORPHANDREÆ.

There are three genera of this tribe, the other two being limited to Africa and Australia.

97. DIMORPHANDRA.

Dimorphandra, Schott, in Spreng. Syst. Cur. Post. p. 404; Benth. et Hook. Gen. Plant. i. p. 587.

About nine arboreous species, restricted to America.

1. **Dimorphandra oleifera,** Tr. MS. in hb. Kew.

PANAMA, Rio-Grande swamp (*S. Hayes*).—COLOMBIA. Hb. Kew.

Suborder III. *MIMOSEÆ.*

This suborder was monographed by Mr. Bentham in 1875 (see Trans. Linn. Soc. vol. xxx.). It comprises twenty-seven genera, and is very numerous in species, which are, with few exceptions, either trees or shrubs, inhabiting warm countries.

Tribe PARKIEÆ.

Limited to the following genus and *Parkia*, a genus of large trees represented in Tropical Asia, Africa, and America, though no species reaches Central America.

98. PENTACLETHRA.

Pentaclethra, Benth. in Hook. Journ. Bot. ii. p. 127.

There are two arboreous species; the other is a native of Tropical Africa.

1. **Pentaclethra filamentosa,** Benth. in Hook. Journ. Bot. ii. p. 127.

NICARAGUA, San Juan (*Œrsted*).—TRINIDAD, GUIANA, and NORTH BRAZIL. Hb. Kew.

Tribe ADENANTHEREÆ.

There are twelve genera of this tribe, whose species are generally dispersed in the tropics.

99. ENTADA.

Entada, Adans. ex DC. Mém. Lég. p. 419; Benth. et Hook. Gen. Plant. i. p. 589.

Eleven shrubby species, four of which occur in America, eight in Africa, and one in Asia.

1. **Entada polystachya,** DC. Mém. Lég. p. 434, tt. 61, 62.

NICARAGUA, Greytown (*Tate*, 37); COSTA RICA, Puntarenas (*Œrsted*); PANAMA (*S. Hayes*, 420).—North parts of SOUTH AMERICA, and WEST INDIES. Hb. Kew.

2. **Entada scandens,** Benth. in Hook. Journ. Bot. iv. p. 332, et in Trans. Linn. Soc. xxx. p. 363.

Mimosa scandens, Linn.
Entada pursætha, E. gigalobium, &c., DC.

PANAMA, Bujio station (*S. Hayes*, 216).—JAMAICA; GUADALOUPE; also widely dispersed in the tropics of the OLD WORLD, including AUSTRALIA. Hb. Kew.

3. sp.

SOUTH MEXICO, Omealca (*Bourgeau*, 3200). Hb. Kew.

100. PIPTADENIA.

Piptadenia, Benth. in Hook. Journ. Bot. iv. p. 334; Benth. et Hook. Gen. Plant. i. p. 589.

Trees and shrubs. Thirty-eight species, of which thirty-four are American, one Mascarene, one Asiatic, and two African.

1. **Piptadenia fœtida,** Benth. in Trans. Linn. Soc. xxx. p. 366.

Mimosa fœtida, Jacq. Hort. Schœnb. iii. p. 73, t. 390.
Acacia fœtida, H. B. K.

SOUTH MEXICO, near the village of Mescala and Venta de Estola, 1590 to 2520 feet (*Humboldt & Bonpland*).—States of COLOMBIA.

2. **Piptadenia patens,** Benth. Bot. Voy. Sulph. p. 89.

Inga patens, Hook. et Arn.
? *Acacia prosopoides,* DC. Calques des Dess. Fl. Mex. 210.

HONDURAS, Tigre Island, Gulf of Fonseca (*Sinclair*); NICARAGUA, near Granada (*Œrsted*), Realejo (*Sinclair*). Hb. Kew.

101. PROSOPIS.

Prosopis, Linn. Mant. n. 1260; Benth. et Hook. Gen. Plant. i. p. 591; Benth. in Trans. Linn. Soc. xxx. p. 376.

Trees and shrubs. Sixteen species, of which thirteen are American, one African, and two Asiatic.

1. **Prosopis cinerascens,** A. Gray, ex Benth. in Trans. Linn. Soc. xxx. p. 381.

Strombocarpa cinerascens, A. Gray.
Mimosa calcarea, Buckl.

Texas.—North Mexico, valley near Azufrora, Nuevo Leon (*Gregg*), without locality (*Berlandier*).

2. **Prosopis? heterophylla,** Benth. in Hook. Lond. Journ. Bot. v. p. 82.

North Mexico, Sonora Alta (*Coulter*). Hb. Trin. Coll. Dubl.

3. **Prosopis juliflora,** DC. Prodr. ii. p. 447; Benth. in Trans. Linn. Soc. xxx. p. 377.

Prosopis horrida, Kunth, Mim. t. 33.
Prosopis dulcis, Kunth, Mim. t. 34.
Prosopis domingensis, DC.
Algarobia dulcis, Benth.
Algarobia glandulosa, Torr. et Gr.

Subtropical North America to—North Mexico, about Matamoras (*Berlandier*), on the Rio Grande near San Elizario (*Wright*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 211); South Mexico, Oaxaca (*Galeotti*, 3243), near Mexico (*Bourgeau*, 92); Nicaragua, Gulf of Fonseca (*Sinclair*), Segovia (*Œrsted*); Panama, on the sea-shore near the city of Panama (*Seemann*, 402).—Southward through the Andes to Chili, and in Buenos Ayres, but hitherto not found in Guiana or Brazil. Hb. Kew.

4. **Prosopis pubescens,** Benth. in Hook. Lond. Journ. Bot. v. p. 82.

Strombocarpa pubescens, A. Gray.
Prosopis emoryi, Torr.

Texas; California.—North Mexico.

5. **Prosopis,** sp.

North Mexico, vicinity of Durango (*Seemann*). Hb. Kew.

102. NEPTUNIA.

Neptunia, Lour. Fl. Cochinch. p. 653; Benth. et Hook. Gen. Plant. p. 592; Benth. Trans. Linn. Soc. xxx. p. 383.

Eight herbaceous species: five occur in America, one in Africa, one in the Mascarene Islands, two in Asia, and two in Australia, two or three being amphigæous.

1. **Neptunia lutea,** Benth. in Hook. Journ. Bot. iv. p. 355.

Texas and Arkansas to—South Mexico, in shady places around Puerta de Agua Dulce (*Seemann*, 99), near Tantoyuca (*Ervendberg*). Hb. Kew.

[2. **Neptunia oleracea,** Lour. Fl. Cochin. p. 654; Benth. in Trans. Linn. Soc. xxx. p. 383.

Mimosa lacustris, Humb. et Bonpl. Pl. Æquin. i. p. 55, t. 16.

Widely dispersed in Tropical AMERICA, AFRICA, and ASIA; but we have seen no specimens from Central America or Mexico.]

3. **Neptunia plana,** Benth. in Hook. Journ. Bot. iv. p. 355; Reliq. Houst. t. 23.

SOUTH MEXICO, Tehuantepec (*Andrieux*, 407), Vera Cruz (*Houston*); NICARAGUA, Segovia (*Ærsted*).—Tropical S. AMERICA to PARAGUAY on the eastern side and ECUADOR on the western, and in the WEST INDIES; also in Tropical ASIA, but probably introduced. Hb. Kew.

4. **Neptunia pubescens,** Benth. in Hook. Journ. Bot. iv. p. 356.

FLORIDA and TEXAS to—MEXICO and COSTA RICA (*Ærsted*).—And in South America to PERU and PARAGUAY. Hb. Kew.

Tribe EUMIMOSEÆ.

This tribe is spread all over the tropics, except Australia; but the species are most numerous in America. There are only five genera.

103. DESMANTHUS.

Desmanthus, Willd. Sp. Plant. iv. p. 1044 (ex parte); Benth. et Hook. Gen. Plant. i. p. 592; Benth. Trans. Linn. Soc. xxx. p. 385.

Ten herbaceous species, nine of which are restricted to America, and one occurs in the Mascarene Islands.

1. **Desmanthus depressus,** H. B. K. in Willd. Sp. Pl. iv. p. 1046; Kunth, Mim. t. 35.

FLORIDA; TEXAS to—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 201); MEXICO (*Jurgensen*, 629); NICARAGUA (*Ærsted*); PANAMA, in woods near the city of Panama (*Seemann*, 106).—SOUTH BRAZIL and PERU and the WEST INDIES. Hb. Kew.

2. **Desmanthus incurvus,** Benth. in Hook. Lond. Journ. Bot. v. p. 84.

Mimosa glandulosa, Michx. Vent. Choix, t. 27.

South States of NORTH AMERICA.—SOUTH MEXICO, Real del Monte to Zacatecas (*Coulter*). Hb. Kew.

3. **Desmanthus leptolobus,** Torr. & Gray, Fl. N. Am. i. p. 402.

TEXAS and ARKANSAS to—NORTH MEXICO, Monterey (*Eaton & Edwards*, 23). Hb. Kew.

4. **Desmanthus virgatus,** Willd. Sp. Pl. iv. p. 1047; Benth. *l. c.* p. 385.

Desmanthus leptophyllus, H. B. K.

SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 602).—Tropical and Subtropical South America to BUENOS AYRES, and the WEST INDIES. Hb. Kew.

5. **Desmanthus,** sp.

Mimosa? *pumila,* Schl. in Linnæa, xii. p. 557.

South Mexico, in calcareous soil near western Regla (*Ehrenberg*).

Mr. Bentham (Trans. Linn. Soc. xxx.) states that this is probably *D. incurvus* or a species closely allied to it.

104. MIMOSA.

Mimosa, Linn. Gen. Plant. n. 1158, ex parte; Benth. et Hook. Gen. Plant. i. p. 593; Benth. in Trans. Linn. Soc. xxx. p. 388.

Herbs or shrubs, or rarely arboreous. An almost exclusively American genus, 271 species out of a total of 278 being American. Three grow in Africa, five in the Mascarene Islands, and two in Asia.

1. **Mimosa acanthocarpa,** Benth. in Hook. Journ. Bot. iv. p. 409.

North Mexico, Mex. Bound. Survey Exp. 308 and 311; South Mexico, Vera Cruz to Orizaba (*Müller*), without habitat (*Graham*), hedges near Mexico (*Bourgeau*, 486). Hb. Kew.

2. **Mimosa adenantheroides,** Benth. in Hook. Lond. Journ. Bot. v. p. 88.

Acacia adenantheroides, Mart. et Gal.

South Mexico, woods at 7000 to 8000 feet in the Cordillera of Oaxaca (*Galeotti*, 3208). Hb. Kew.

3. **Mimosa albida,** Humb. et Bonpl. in Willd. Sp. Pl. iv. p. 1030.

South Mexico, Acapulco (*Barclay & Sinclair*); Guatemala, Dueñas (*Fraser*); Nicaragua, Volcan el Viejo (*Œrsted*); Costa Rica, Cartago (*Œrsted*).—And southward to Lima. Hb. Kew.

4. **Mimosa arcuata,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 308.

South Mexico, calcareous mountains east of Tehuacan de las Granadas, at 6000 feet (*Galeotti*, 3222).

5. **Mimosa asperata,** Linn. Sp. Pl. p. 1507; Reliq. Houst. t. 24; DC. Mém. Lég. t. 63.

South Mexico, Vera Cruz (*Houston*), valley of Cordova (*Bourgeau*, 1543, 2209); Nicaragua, Greytown (*Tate*); Costa Rica, savanna of San José (*Polakowsky*); Panama, Chagres (*Fendler*, 98), in damp places, ditches, and banks of rivers, Chagres, Gorgona, and Cruces (*Seemann*, 527).—And nearly all over Tropical South America; also in Tropical and Subtropical Africa. Hb. Kew.

6. **Mimosa biuncifera,** Benth. Pl. Hartw. p. 12.

Texas; New Mexico.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 215), Mabibi, Sonora (*Thurber*), Sierra del Pajarito (*Schott*), Ojito (*Gregg*); South Mexico, valley of Mexico (*Bourgeau*, 89), Chalco, in the State of Mexico (*Andrieux*), Leon (*Hartweg*). Hb. Kew.

Var.? leguminis margine valde aculeato.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 216). Hb. Kew.

7. **Mimosa berlandieri,** A. Gray in Torr. Bot. Emory Exped. p. 61.

NORTH MEXICO, environs of Matamoras (*Berlandier*, 3146).

8. **Mimosa borealis,** A. Gray, Pl. Fendl. p. 39.

NEW MEXICO.—NORTH MEXICO, Buena Vista and Cadena (*Gregg*). Hb. Kew.

9. **Mimosa cabrera,** Karst. Fl. Colomb. ii. p. 63, t. 132.

? SAN SALVADOR (*Wendland*).—COLOMBIA. Hb. Kew.

10. **Mimosa camporum,** Benth. in Hook. Journ. Bot. ii. p. 130.

NICARAGUA, Realejo (*Hinds, Sinclair*).—GUIANA and NORTH BRAZIL. Hb. Kew.

11. **Mimosa costaricensis,** Benth. in Trans. Linn. Soc. xxx. p. 423.

GUATEMALA, Barranca Honda, Volcan de Fuego (*Salvin*); COSTA RICA, Aguacate (*Œrsted*). Hb. Kew.

12. **Mimosa debilis,** Humb. et Bonpl. in Willd. Sp. Pl. iv. p. 1029.

The typical plant occurs in COLOMBIA, GUIANA, and NORTH BRAZIL.

Var.? **panamensis,** Benth. in Trans. Linn. Soc. xxxi p. 391.

PANAMA, in meadows near the town of Nata (*Seemann*, 98). Hb. Kew.

13. **Mimosa depauperata,** Benth. Pl. Hartw. p. 13.

Acacia canescens, Mart. et Gal.

SOUTH MEXICO, cactus-hills in the Cordillera of Oaxaca, at 6000 feet (*Galeotti*, 3214), Actopan (*Graham*), Zimapan (*Coulter*), valley of Mexico (*Bourgeau*, 772). Hb. Kew.

14. **Mimosa distachya,** Cav. Ic. iii. p. 48, t. 295.

SOUTH MEXICO, ravines at 3000 feet, Cordillera of Oaxaca (*Galeotti*, 3240), Mexico (*Schleiden*). Hb. Kew.

15. **Mimosa dormiens,** Humb. et Bonpl. in Willd. Sp. Pl. iv. p. 1035.

CENTRAL AMERICA. Hb. Pavon.

16. **Mimosa ervendbergii,** A. Gray in Proc. Am. Acad. v. p. 178.

Schrankia elata, Mart. et Gal.

SOUTH MEXICO, near Tantoyuca (*Ervendberg*), without habitat (*Galeotti*, 3193). Hb. Kew.

17. **Mimosa fasciculata,** Benth. in Hook. Lond. Journ. Bot. v. p. 88.

Acacia fasciculata, Kunth, Mim. t. 23.

SOUTH MEXICO, near Guanaxuato (*Humboldt & Bonpland*), without exact localities (*Karwinski*). Hb. Kew.

18. **Mimosa flexuosa,** Benth. (Char. amplif.)

Fruticosa, puberula, ramis gracilibus et flexuosis vel crassioribus et rectis, aculeis infrastipularibus

geminis rectiusculis vel recurvis, pinnis 6–9-jugis, foliolis minutis confertis usque 15-jugis, capitulis breviter pedunculatis, calyce corollaque superne pilosulis, legumine puberulo oblongo usque 4 lineas lato margine valde aculeato.

Frutex, ramis graciliusculis vel gracilibus, flexuosis vel rectiusculis, pruinoso-puberulis; aculei infrastipulares gemini, rectiusculi vel recurvi, petiolares recurvi. *Folia* brevissime petiolata, bipinnata, maxima 9 lineas longa; pinnæ 5–9-jugæ, 2–3 lineas longæ; foliola 8–15-juga, imbricata, oblonga, puberula, vix semilineam longa. *Flores* parvi, capitati, capitulorum pedunculi sæpissime infra semipollicares; calyx atque corolla superne pilosula. *Legumen* fuscum, cinereo-puberulum, sessile, oblongum, usque ad sesquipollicare et longius, 4 lineas latum, margine valde aculeatum, aculeis usque 2 lineas longis.—*Mimosa flexuosa*, Benth. in A. Gray, Pl. Wright. i. p. 428.

Texas; New Mexico.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 217). Hb. Kew.

At first sight Parry and Palmer's specimens look very different from the typical specimens collected by Wright, having comparatively stout, straight branches and pods at least twice as broad; but in other respects they agree. Moreover the pods in the typical specimens have all been interrupted in their growth by the larvæ of some insect, and have probably not attained their normal size.

19. **Mimosa floribunda,** Willd. Sp. Pl. iv. p. 1031; Hook. Ic. Pl. t. 373.

Mimosa racemosa, Schl.

South Mexico, Tepic (*Sinclair*), Orizaba (*Botteri*, 674, 676, 854; *Bourgeau*, 2867), Jalapa (*Galeotti*, 3329), Mirador (*Linden*, 683), at the foot of Mount San Felipe (*Andrieux*, 402), valley of Cordova (*Bourgeau*, 1541); Guatemala, lower part of Volcan de Fuego (*Salvin & Godman*); Costa Rica, savanna of San José (*Polakowsky*).—Southward to Bolivia and Peru. Hb. Kew.

20. **Mimosa galeottii,** Benth. in Hook. Lond. Journ. Bot. v. p. 92.

Acacia hirta, Mart. et Gal.

South Mexico, woods on the Pacific side of the Cordillera of Oaxaca, at 6000 to 7500 feet (*Galeotti*, 3165). Hb. Kew.

21. **Mimosa geminata,** DC. Prodr. ii. p. 427; Calques des Dess. Fl. Mex. 205.

Mexico.

22. **Mimosa grahami,** A. Gray, Pl. Wright. ii. p. 52.

North Mexico, mountain-valleys of Sonora between San Pedro and Sonoito (*Wright*, 1042), Sierra Madre (*Seemann*, 2196). Hb. Kew.

23. **Mimosa guatemalensis,** Benth. Bot. Voy. Sulph. p. 89.

Inga guatemalensis, Hook. et Arn.

North Mexico, Cerro de Pinal (*Seemann*, 1538); South Mexico, Tepic (*Barclay*); Nicaragua, Realejo (*Sinclair*); Guatemala. Hb. Kew.

24. **Mimosa invisa,** Mart. Herb. Fl. Bras. p. 121; Benth. Mim. Fl. Bras. p. 379, t. 97.

Schrankia brachycarpa, Benth.

South Mexico, Orizaba (*Botteri*, 673), Jalapa (*Galeotti*, 3328), Zacuapan (*Linden*), valley of Cordova (*Bourgeau*, 1759); Costa Rica, Aguacate (*Œrsted*), San José (*Polakowsky*); Panama (*S. Hayes*).—Brazil and West Indies. Hb. Kew.

25. **Mimosa lactiflua,** Delile, Benth. in Trans. Linn. Soc. xxx. p. 392.
Mexico (*Ehrenberg*).

26. **Mimosa laxiflora,** Benth. in Hook. Lond. Journ. Bot. v. p. 93.
North Mexico, Sonora Alta (*Coulter*, 522). Hb. Kew.

27. **Mimosa leucænoides,** Benth. in Hook. Lond. Journ. Bot. v. p. 89.
South Mexico, Zimapan (*Coulter*), without locality (*Karwinski*). Hb. Kew.

28. **Mimosa lindheimeri,** A. Gray, Pl. Lindh. ii. p. 181.
Texas.—South Mexico, hedges near the city of Mexico (*Bourgeau*, 486, in part). Hb. Kew.

29. **Mimosa malacophylla,** A. Gray, Pl. Lindh. ii. p. 182, in adnot.
Texas.—North Mexico, Monterey (*Eaton & Edwards*, 22), east of Rinconada (*Gregg*), Santa Rosa, Chihuahua (*Bigelow*).

30. **Mimosa mollis,** Benth. in Hook. Journ. Bot. iv. p. 408.
South Mexico, Acatlan, Puebla (*Andrieux*, 400). Hb. Kew.

31. **Mimosa monancistra,** Benth. Pl. Hartw. p. 12.
Mexico, Aguas Calientes (*Hartweg*, 70). Hb. Kew.

32. **Mimosa platycarpa,** Benth. in Trans. Linn. Soc. xxx. p. 417.
Guatemala (*Skinner*). Hb. Kew.

33. **Mimosa polyantha,** Benth. in Hook. Journ. Bot. iv. p. 410.
South Mexico, Acatlan, Puebla (*Andrieux*, 397). Hb. Kew.

34. **Mimosa puberula,** Benth. in Hook. Lond. Journ. Bot. v. p. 88.
South Mexico, Zimapan (*Coulter*), New Spain (*Pavon*). Hb. Kew.

35. **Mimosa pudica,** Linn. Sp. Pl. p. 1501; Benth. in Trans. Linn. Soc. xxx. p. 397.
Mimosa hirsuta, Moç. et Sessé.

South Mexico, valley of Cordova (*Bourgeau*, 1863, 1759, 1862), region of Orizaba (*Bourgeau*, 2400, 2671), Vera Cruz to Orizaba (*Müller*); Nicaragua, Greytown (*Tate*); Costa Rica (*Œrsted*), San José and Cartago (*Polakowsky*); Panama, Chagres (*Fendler*, 96), Isle of Taboga (*Sinclair*).—A common plant in most parts of Tropical America; naturalized in Tropical Africa and Asia. Hb. Kew.

36. **Mimosa pusilla,** Benth. Bot. Voy. Sulph. p. 90.
Nicaragua, Realejo (*Sinclair*, *Hinds*). Hb. Kew.

37. **Mimosa skinneri,** Benth. in Hook. Lond. Journ. Bot. v. p. 85.
Guatemala, Cuesta de Leon (*Skinner*); Costa Rica, Ujaras (*Œrsted*). Hb. Kew.

38. **Mimosa somnians,** Humb. et Bonpl., ex Benth. in Trans. Linn. Soc. xxx. p. 434.

Mimosa podocarpa, Benth. in Wawra, Bot. Maxim. Reise, i. t. 34.

PANAMA, in meadows near the city of Panama (*Seemann*, 105), Rio-Grande railway-station (*S. Hayes*, 212).—COLOMBIA; GUIANA; BRAZIL. Hb. Kew.

39. **Mimosa strigillosa,** Torr. et Gray, Fl. N. Am. i. p. 399.

Southern States of NORTH AMERICA to—NORTH MEXICO, Matamoras (*Berlandier*, 2302). Hb. Kew.

40. **Mimosa tenuiflora,** Benth. in Hook. Lond. Journ. Bot. v. p. 98.

SOUTH MEXICO, Zimapan (*Coulter*).

41. **Mimosa tricephala,** Ch. et Schl. in Linnæa, v. p. 591.

SOUTH MEXICO, between Laguna Verde and Actopan (*Schiede*). Hb. Kew.

42. **Mimosa trijuga,** Benth. in Hook. Journ. Bot. iv. p. 398.

SOUTH MEXICO, Yucatan and Tabasco (*Johnson*); PANAMA.—BRAZIL. Hb. Kew.

43. **Mimosa velloziana,** Mart. Herb. Fl. Bras. p. 185; Benth. Mim. Fl. Bras. p. 304, t. 80.

Mimosa viva, Vell. Flum. Ic. xi. t. 33, nec Linnæi.

GUATEMALA, Chojojo, near Mazatenango, in pastures (*Bernoulli*, 60); COSTA RICA, Guanacaste (*Œrsted*); PANAMA, Chagres (*Fendler*, 91).—COLOMBIA to BRAZIL. Hb. Kew.

44. **Mimosa wrightii,** A. Gray, Pl. Wright. ii. p. 52.

NORTH MEXICO, Sonora (*Wright*). Hb. Kew.

45. **Mimosa zygophylla,** Benth. in Gray, Pl. Wright. i. p. 61.

NORTH MEXICO, La Vaqueria towards San Juan, thirty miles from Saltillo (*Wislizenus*), near Saltillo and Monterey (*Gregg*).

46. **Mimosa,** sp.

NORTH MEXICO, San Luis Potosi to Tampico (*Palmer*, 1057). Hb. Kew.

105. SCHRANKIA.

Schrankia, Willd. Sp. Plant. iv. p. 1041; Benth. et Hook. Gen. Plant. i. p. 593; Benth. in Trans. Linn. Soc. xxx. p. 441.

Herbs or undershrubs. Six species, restricted to America.

1. **Schrankia aculeata,** Willd. Sp. Pl. iv. p. 1041; Reliq. Houst. t. 25.

TEXAS.—SOUTH MEXICO, Vera Cruz (*Houston*, *Schiede*); Vera Cruz to Orizaba (*Müller*). Hb. Kew.

2. **Schrankia distachya,** DC. Prodr. ii. p. 443; Calques des Dess. Fl. Mex. 211.
MEXICO.
Not mentioned in Bentham's Monograph of the *Mimoseæ*.

3. **Schrankia leptocarpa,** DC. Prodr. ii. p. 443.
PANAMA, near the city of Panama (*Seemann*, 97).—Common in COLOMBIA, GUIANA, and BRAZIL. It also occurs in Tropical AFRICA and JAVA; but probably introduced. Hb. Kew.

4. **Schrankia uncinata,** Willd. Sp. Pl. iv. p. 1043.
Mimosa horridula, Vent. Choix, t. 28.
Southern States of NORTH AMERICA to—NORTH MEXICO, Monterey, Nuevo Leon (*Eaton & Edwards*). Hb. Kew.

106. LEUCÆNA.

Leucæna, Benth. in Hook. Journ. Bot. iv. p. 416; Benth. et Hook. Gen. Plant. i. p. 594; Benth. in Trans. Linn. Soc. xxx. p. 442.

Trees and shrubs. Nine species, eight of which are restricted to America.

1. **Leucæna diversifolia,** Benth. in Hook. Journ. Bot. iv. p. 417.
Acacia diversifolia, Schl.
Acacia trichandra, Zucc.

SOUTH MEXICO, plateau of the Cordillera of Oaxaca, at 5000 feet (*Galeotti*, 3226), in woods near Jalapa, and at Hacienda de la Laguna (*Schiede*). Hb. Kew.

2. **Leucæna esculenta,** Benth. in Trans. Linn. Soc. xxx. p. 442.
Acacia esculenta, DC. Calques des Dess. Fl. Mex. 209.
MEXICO (*Uhde*). Hb. Berol.

3. **Leucæna glauca,** Benth. in Hook. Journ. Bot. iv. p. 416.
NORTH MEXICO, near Rinconada (*Gregg*); SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 92).—Common in the warmer regions both of the OLD WORLD and AMERICA; probably of North-American origin.

4. **Leucæna macrophylla,** Benth. Bot. Voy. Sulph. p. 90.
CALIFORNIA.—SOUTH MEXICO, Acapulco (*Hinds*); PANAMA, Empire railway-station (*S. Hayes*, 103). Hb. Kew.

5. **Leucæna pulverulenta,** Benth. in Hook. Journ. Bot. iv. p. 417.
Acacia pulverulenta, Schl.
NORTH MEXICO, Matamoras (*Berlandier*, 2288); SOUTH MEXICO, without locality (*Galeotti*), on the banks of the river Misantla, near San Antonio (*Schiede*), Orizaba (*Bourgeau*, 2397, 2909), near Mexico (*Bilimek*, 131), Tuspango, near Cordova (*Bourgeau*, 2401). Hb. Kew.

Tribe ACACIEÆ.

Restricted to the genus *Acacia*.

107. ACACIA.

Acacia, Willd. Sp. Plant. iv. p. 1049; Benth. et Hook. Gen. Plant. i. p. 594; Benth. in Trans. Linn. Soc. xxx. p. 444.

Trees and shrubs; a very few herbaceous. Mr. Bentham describes 432 species, sixty-one of which are American, fifty-seven African, two Mascarene, nineteen Asiatic, four Polynesian, and 293 Australian.

1. **Acacia acatlensis,** Benth. in Hook. Lond. Journ. Bot. i. p. 513. 1842
Acacia sericea, Mart. et Gal. 1843

South Mexico, Acatlan, Puebla (*Andrieux*, 396), Cordillera of Oaxaca, at 5000 to 6000 feet (*Galeotti*, 3345). Hb. Kew.

2. **Acacia amentacea,** DC. Prodr. ii. p. 455; Calques des Dess. Fl. Mex. 208.
Acacia rigidula, Benth.

Texas.—North Mexico, near Rinconada, between Saltillo and Monterey (*Gregg*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 213). Hb. Kew.

3. **Acacia berlandieri,** Benth. in Hook. Lond. Journ. Bot. i. p. 522.
Acacia tephroloba, A. Gray.

Texas; New Mexico.—North Mexico, San Luis Potosi to Tampico (*Palmer*, 1059), about Cadena, halfway between Chihuahua and Monterey (*Wislizenus*), Monterey (*Plotz*), Sonora (*Wright*), without locality, but most likely from South Mexico (*Bates*). Hb. Kew.

4. **Acacia constricta,** Benth. in A. Gray, Pl. Wright. i. p. 66.

Texas.—North Mexico, El Paso to Chihuahua (*Wislizenus*), near Mier, Castanuola, and Buena Vista (*Gregg*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 214). Hb. Kew.

5. **Acacia coulteri,** Benth. in A. Gray, Pl. Wright. i. p. 66.

Texas.—South Mexico, Zimapan (*Coulter*); Nicaragua, near Granada (*Œrsted*). Hb. Kew.

6. **Acacia crassifolia,** A. Gray in Mem. Amer. Acad. v. p. 317; Hook. Ic. Pl. p. 1166.

North Mexico, La Peña, Coahuila (*Edwards & Thurber*). Hb. Kew.

7. **Acacia cylindriflora,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 311.
South Mexico, ravines of Dominguillo, near Oaxaca (*Galeotti*, 3207).
Apparenty not mentioned in Bentham's Monograph of the *Mimoseæ*.

8. **Acacia farnesiana,** Willd. Sp. Pl. iv. p. 1083; Wight's Ic. Pl. Ind. Or. t. 300.
North Mexico, Sierra Madre (*Seemann*, 2197), Monterey, Nuevo Leon (*Plotz*); South

Mexico, San Juan del Rio, Orizaba (*Bourgeau*, 2911, 2913, 2317), Orizaba (*Botteri*, 671), cactus-plains in the Cordillera of Oaxaca, at 5000 to 5500 feet (*Galeotti*, 3222); Panama, without locality (*Seemann*, 103). Hb. Kew.

Widely spread in nearly all tropical and subtropical regions; but it is difficult to say where it is really indigenous, as it is very generally cultivated.

9. **Acacia ferox,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 312.

South Mexico, abundant in the plains of Oaxaca, Tlacolula, and Etla (*Galeotti*, 3223). Hb. Kew.

10. **Acacia filicina,** Willd. Sp. Pl. iv. p. 1072; Benth. in Trans. Linn. Soc. xxx. p. 532.

Acacia texensis, Torr. et Gray.
Acacia glabrata, elegans, hirsuta, cuspidata et *stipellata,* Schl.
Acacia elegans et *insignis,* Mart. et Gal.
Acacia hartwegii, Benth.
Acacia angulosa, Bertol.
Acacia chlorantha, Zucc.
Acacia umbellulifera, Kunth, Mim. t. 31.

Arkansas, Texas, and New Mexico, to—North Mexico, Sonora (*Torrey*), Sierra Madre (*Seemann*, 2195), Zacatecas (*Hartweg*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 218); South Mexico, valley of Cordova (*Bourgeau*, 1545), Vera Cruz, in woods at 3000 feet (*Galeotti*, 3303); region of Orizaba (*Bourgeau*, 2570), at the foot of Mount San Felipe (*Andrieux*, 398), Zimapan (*Coulter*, 514), without localities (*Tate & Parkinson*); Guatemala (*Skinner*); Costa Rica, Candelaria (*Œrsted*). —Also in Colombia. Hb. Kew.

11. **Acacia flexicaulis,** Benth. in Hook. Lond. Journ. i. p. 505.

Texas—North Mexico, Monterey, Nuevo Leon (*Thurber*), Camargo, Monterey (*Gregg*), Cerralvo (*Wislizenus*).

12. **Acacia glomerosa,** Benth. in Hook. Lond. Journ. Bot. i. p. 521.

Tropical South America to Rio Janeiro and Peru.

Var. **parviflora,** Benth. MSS. in hb. Kew.

Panama, Empire and Obispo railway-stations (*S. Hayes*, 266 and 330). Hb. Kew.

13. **Acacia greggii,** A. Gray, Pl. Wright. i. p. 65.

Texas.—North Mexico, dry valley west of Patos (*Gregg*). Hb. Kew.

14. **Acacia hayesii,** Benth. in Trans. Linn. Soc. xxx. p. 524.

Panama, Mamei railway-station (*S. Hayes*, 165). Hb. Kew.

15. **Acacia hindsii,** Benth. in Hook. Lond. Journ. Bot. i. p. 504.

Mexico, without locality (*Jurgensen*, 169), Manzanilla Bay (*Hinds*); Costa Rica, Pacaca (*Œrsted*). Hb. Kew.

16. **Acacia lanata,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 313.
South Mexico, Misteca Alta, 7000 feet (*Galeotti*, 3231).

17. **Acacia macracantha,** Humb. et Bonpl. in Willd. Sp. Pl. iv. p. 1080; Kunth, Mim. t. 28.
Acacia macracanthoides et *subinermis,* Bertol.
South Mexico, Vera Cruz (*Schiede*); Central America.—Tropical and Subtropical South America, chiefly on the western side.

18. **Acacia malacophylla,** Benth. in A. Gray, Pl. Wright. i. p. 64.
Texas.—North Mexico, Cerralvo (*Wislizenus*).

19. **Acacia mammifera,** Schl. in Linnæa, xii. p. 563.
South Mexico, Barranca de Acholoya (*Ehrenberg*).

20. **Acacia melanoceras,** Beurling, Vetensk. Akad. Hand. 1854, p. 123.
Panama, woods on the road to Panama (*Billberg*).
This name is omitted from Bentham's monograph; but the plant doubtless belongs to one of the species therein enumerated.

21. **Acacia micrantha,** Benth. in Trans. Linn. Soc. xxx. p. 526.
Mexico, without habitat (*Berlandier*, 3148), Las Ajuntas and Las Verdosas (*Ehrenberg*).

22. **Acacia? mollicula,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 311.
South Mexico, mountains of Tehuacan de las Granadas, 6500 feet (*Galeotti*, 3216).
This is not mentioned in Bentham's monograph.

23. **Acacia pennatula,** Benth. in Hook. Lond. Journ. i. p. 390.
Inga pennatula, Ch. et Schl.
North Mexico, Zacatecas (*Hartweg*); South Mexico, Hacienda de la Laguna and near Jalapa (*Schiede*), Escamella, Orizaba (*Bourgeau*, 2912; *Müller*, 824), Cuernavaca (*Bilimek*, 129); Nicaragua, Granada (*Œrsted*). Hb. Kew.

24. **Acacia platyacantha,** Schl. in Linnæa, xii. p. 565.
South Mexico, Mineral del Monte (*Ehrenberg*).

25. **Acacia pubescens,** Schl. in Linnæa, xii. p. 565.
South Mexico, near Regla (*Ehrenberg*).

26. **Acacia reniformis,** Benth. in Hook. Ic. Pl. t. 1165.
Mexico (*Ehrenberg*). Hb. Berol.

27. **Acacia riparia,** H. B. K. Nov. Gen. et Sp. iv. p. 276.
Mimosa plana, Vell. Fl. Flum. Ic. xi. t. 28?
Panama (*Seemann*).—Colombia, Guiana, Brazil, and West Indies.

28. **Acacia rœmeriana,** Scheele, in Linnæa, xxi. p. 456.
TEXAS.—NORTH MEXICO.

29. **Acacia rotundata,** Benth. in Trans. Linn. Soc. xxx. p. 521.
MEXICO. Hb. Pavon.

30. **Acacia schottii,** Torr. Bot. Emory Exp. p. 62.
TEXAS.—NORTH MEXICO.

31. **Acacia spadicigera,** Ch. et Schl. in Linnæa, v. p. 594.
SOUTH MEXICO, near La Laguna Verde (*Schiede & Deppe*); NICARAGUA, Segovia (*Œrsted*); PANAMA, without locality (*Cuming*; *Seemann*, 101).

32. **Acacia sphærocephala,** Ch. et Schl. in Linnæa, v. p. 594.
SOUTH MEXICO, Vera Cruz (*Schiede & Deppe*, *Müller*).

33. **Acacia tortuosa,** Willd. Sp. Pl. iv. p. 1083.
Acacia albida, Lindl. Bot. Reg. t. 1317.
Prosopis microphylla, H. B. K.
TEXAS.—NORTH MEXICO, Saltillo (*Plotz*); SOUTH MEXICO, between Valladolid and Toluca, near Maravatio (*Humboldt & Bonpland*), Tlalpuxahua (*Graham*); COSTA RICA (*Œrsted*).—Also in the WEST INDIES, north parts of SOUTH AMERICA, and the GALAPAGOS ISLANDS. Hb. Kew.

34. **Acacia villosa,** Willd. Sp. Pl. iv. p. 1067; Benth. in Trans. Linn. Soc. xxx. p. 532.
Acacia cumingii, Benth.
Acacia carbonaria, Schl.
NICARAGUA, Conchagua, Gulf of Honda (*Hinds*), San Juan (*Œrsted*).—Also in the WEST INDIES. Hb. Kew.

35. **Acacia wrightii,** Benth. in A. Gray, Pl. Wright. i. p. 64.
TEXAS.—NORTH MEXICO, Sierra del Pajarito, Sonora (*Schott*), near Ojito (*Gregg*), Chaparal, between Monterey and Cerralvo (*Wislizenus*). Hb. Kew.

36. **Acacia,** sp.
NORTH MEXICO, region of San Luis Potosi (*Parry & Palmer*, 219). Hb. Kew.

Tribe INGEÆ.

Eight genera, spread nearly all over the tropics, mostly large trees.

108. LYSILOMA.

Lysiloma, Benth. in Hook. Journ. Bot. iii. p. 82; Benth. et Hook. Gen. Plant. i. p. 595; Benth. in Trans. Linn. Soc. xxx. p. 533.

An exclusively American genus, consisting of ten shrubby and arboreous species.

1. **Lysiloma acapulcensis,** Benth. in Hook. Lond. Journ. Bot. iii. p. 83.

Acacia acapulcensis, Kunth, Mim. t. 24.
Acacia desmostachys, Benth.

Mexico, Volcan de Santa Barbara (*Berlandier*), Vera Cruz to Orizaba (*Müller*), Leon (*Hartweg*), without locality (*Hahn*). Hb. Kew.

2. **Lysiloma aurita,** Benth. in Hook. Lond. Journ. Bot. iii. p. 83.

Acacia aurita, Schl.

South Mexico, Malpays de Naulingo (*Schiede*); Guatemala (*Skinner*); Nicaragua, Segovia (*Œrsted*). Hb. Kew.

3. **Lysiloma guachapele,** Benth. in Trans. Linn. Soc. xxx. p. 533.

Panama, Isle of Taboga (*S. Hayes*, 656).—Ecuador. Hb. Kew.

4. **Lysiloma microphylla,** Benth. in Hook. Lond. Journ. Bot. iii. p. 83.

Lower California.—North Mexico, Zacatecas (*Hartweg*). Hb. Kew.

5. **Lysiloma schiedeana,** Benth. in Hook. Lond. Journ. Bot. iii. p. 83; Bot. Voy. Sulph. t. 31.

Nicaragua (*Sinclair*); Costa Rica, near Puntarenas (*Œrsted*). Hb. Kew.

6. **Lysiloma tergemina,** Benth. in Trans. Linn. Soc. xxx. p. 534.

South Mexico, Acatlan, Puebla (*Andrieux*, 403). Hb. Kew.

7. **Lysiloma,** sp.

South Mexico, forest of Tuspango, near Cordova (*Bourgeau*, 2398). Hb. Kew.

109. CALLIANDRA.

Calliandra, Benth. in Hook. Journ. Bot. ii. p. 138; Benth. et Hook. Gen. Plant. i. p. 596; Benth. in Trans. Linn. Soc. xxx. p. 536.

A genus of 100 species of shrubs and small trees, whereof ninety-five are American, one Mascarene, and four Asiatic.

1. **Calliandra angelica,** Benth. in Hook. Lond. Journ. Bot. iii. p. 100.

South Mexico, ravines of Regla, in the Cordillera of Vera Cruz, at 5000 feet (*Galeotti*, 3362). Hb. Kew.

2. **Calliandra canescens,** Benth. in Hook. Lond. Journ. Bot. iii. p. 96.

Inga canescens, Ch. et Schl.

South Mexico, between Marantial and Puente del Rey (*Schiede & Deppe*).

3. **Calliandra capillata,** Benth. in Hook. Lond. Journ. Bot. iii. p. 98.

South Mexico, at the foot of Mount San Felipe (*Andrieux*, 404); Guatemala, Rio Guacalate (*Salvin*). Hb. Kew.

4. **Calliandra carbonaria,** Benth. in Hook. Lond. Journ. Bot. iii. p. 95.

Costa Rica, Mount Aguacate (*Ærsted*).—Andes of Quito and Popayan. Hb. Kew.

5. **Calliandra conferta,** Benth. in A. Gray, Pl. Wright. i. p. 63.

West Texas.—North Mexico, Monterey, Nuevo Leon (*Eaton & Edwards*, 314), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 212). Hb. Kew.

6. **Calliandra cumingii,** Benth. in Hook. Journ. Bot. ii. p. 140.

Inga? *speciosa,* Mart. et Gal.

New Mexico—North Mexico, Santa Cruz, Sonora (*Wright*); South Mexico, woods at 6000 to 8000 feet in the Cordillera of Oaxaca (*Galeotti*, 3148); Panama (*Cuming*).—Also in Peru. Hb. Kew.

7. **Calliandra emarginata,** Benth. in Hook. Journ. Bot. iii. p. 95.

Inga emarginata, Kunth, Mim. t. 17.

Inga coriacea, Willd.

South Mexico, near Acapulco (*Humboldt & Bonpland*), Consoquitla (*Liebmann*, 122). Hb. Kew.

8. **Calliandra eriophylla,** Benth. in Hook. Lond. Journ. Bot. iii. p. 105.

Calliandra chamædrys, Engelm.

Texas; New Mexico—North Mexico, on the more elevated parts of the sierras of Sonora (*Thurber*, *Schott*), Chihuahua (*Gregg*), Chiricahui Mountains (*Wright*); South Mexico, Chila, Puebla (*Andrieux*, 405). Hb. Kew.

9. **Calliandra formosa,** Benth. in Hook. Lond. Journ. Bot. iii. p. 98.

Acacia formosa, Kunth, Mim. t. 32.

Acacia gracilis, Mart. et Gal.

South Mexico, granitic rocks in the Cordillera of Oaxaca (*Galeotti*, 3190); Nicaragua, Mombacho to Granada (*Ærsted*). Hb. Kew.

10. **Calliandra grandiflora,** Benth. in Hook. Journ. Bot. ii. p. 139.

Calliandra kunthii, Benth.

Inga anomala, Kunth, Mim. t. 22.

Acacia callistemon, Schl.

North Mexico, Cerro de Pinal (*Seemann*, 1539); South Mexico, valley of Mexico (*Bourgeau*, 87), Zimapan and Real del Monte (*Coulter*, 509), Tlalpuxahua (*Graham*), Chiapas (*Ghiesbreght*, 593), around Toluca (*Andrieux*, 406), without localities (*Parkinson, Sallé, Bates, & Müller*); Guatemala, Dueñas (*Fraser*), Llanos at the base of the Volcan de Fuego (*Salvin & Godman*); Costa Rica, San José (*Ærsted*). Hb. Kew.

11. **Calliandra harrisii,** Benth. in Hook. Lond. Journ. Bot. iii. p. 95; Bot. Mag. t. 4238.

Inga harrisii, Lindl. Bot. Reg. 1839, t. 41.

"Mexico: introduced into English gardens by Mr. Harris, of Kingsbury," according to Lindley; but Mr. Bentham thinks it must be a Brazilian plant.

12. **Calliandra hirsuta,** Benth. in Trans. Linn. Soc. xxx. p. 554.

Inga hirsuta, Don.

New Spain. Hb. Pavon.

13. **Calliandra houstoni,** Benth. in Hook. Journ. Bot. p. 139.

Inga? houstoni, DC. Calques des Dess. Fl. Mex. 206.

Acacia metrosideriflora, Schl.

South Mexico, Jalapa (*Linden*, 677), woods at 2000 to 4000 feet in the Cordillera of Vera Cruz (*Galeotti*, 3315), Hacienda de la Laguna (*Schiede*). Hb. Kew.

14. **Calliandra humilis,** Benth. in Hook. Lond. Journ. Bot. v. p. 103.

Calliandra herbacea, Engelm.

Acacia humilis, Schl.

North Mexico (Mex. Bound. Surv. Exp. 315 and 317), Zacatecas (*Coulter*, 511); South Mexico, Regla (*Ehrenberg*). Hb. Kew.

15. **Calliandra lambertiana,** Benth. in Hook. Lond. Journ. Bot. iii. p. 100.

Acacia lambertiana, Don, Bot. Reg. t. 721.

Mexico, cultivated specimen. Hb. Kew.

16. **Calliandra laxa,** Benth. in Trans. Linn. Soc. xxx. p. 551.

Calliandra xalapensis, Benth.

Acacia rubescens, Mart. et Gal.

South Mexico, Jalapa (*Galeotti*); Costa Rica, Barba (*Œrsted*).—Colombia; Venezuela; Guiana. Hb. Kew.

17. **Calliandra magdalenæ,** Benth. in Hook. Lond. Journ. Bot. v. p. 102.

Panama, Palmas, Veraguas (*Seemann*, 1194).—Colombia; Ecuador. Hb. Kew.

18. **Calliandra malacophylla,** Benth. in Hook. Lond. Journ. Bot. iii. p. 100.

South Mexico, at the foot of Monte San Felipe (*Andrieux*, 401). Hb. Kew.

19. **Calliandra portoricensis,** Benth. in Hook. Lond. Journ. Bot. iii. p. 99; Torr. Rep. Emory Exp. p. 61

Mimosa portoricensis, Jacq. Ic. Rar. iii. t. 633.

North Mexico, Arroyo de los Samotas, Sierra Verde, Sonora (*Schott*); South Mexico, Orizaba, (*Botteri*, 672; *Bourgeau*, 1512, 2553; *Bilimek*, 727), Jalapa (*Galeotti*), Yucatan and Tabasco (*Johnson*); Nicaragua (*Œrsted*).—Northern parts of South America; also in West Tropical Africa, where it was possibly introduced. Hb. Kew.

20. **Calliandra seemanni,** Benth. in Seem. Bot. Voy. 'Herald,' p. 116, t. 22.

Inga semicordata, Bertol.

Guatemala (*Velasquez*); Panama, Tolé (*Seemann*, 1193).—Cumana. Hb. Kew.

21. **Calliandra tetragona,** Benth. in Hook. Journ. Bot. ii. p. 139.

South Mexico, without exact habitats (*Jurgensen*, 792; *Schiede*), valley of Cor-

dova (*Bourgeau*, 1544); Guatemala, Esquintla, 1200 feet (*Salvin & Godman*); Costa Rica, Aguacate (*Œrsted*).—Colombia. Hb. Kew.

22. **Calliandra tetraphylla,** Benth. in Trans. Linn. Soc. xxx. p. 544.

Inga tetraphylla, Don.

Mexico (*Moçino & Sessé*). Hb. Pavon; in Hb. Oxon.

23. **Calliandra wendlandi,** Benth. in Trans. Linn. Soc. xxx. p. 556.

Guatemala (*Wendland*).

110. PITHECOLOBIUM.

Pithecolobium, Mart. Herb. Fl. Bras. p. 114; Benth. et Hook. Gen. Plant. i. p. 597; Benth. in Trans. Linn. Soc. xxx. p. 570.

Upwards of 100 arboreous and shrubby species, of which seventy-eight are American, one African, one Mascarene, twenty-one Asiatic, one Polynesian, and four Australian.

1. **Pithecolobium acatlense,** Benth. in Trans. Linn. Soc. xxx. p. 593.

South Mexico, Acatlan, Puebla (*Andrieux*, 395). Hb. Kew.

2. **Pithecolobium albicans,** Benth. in Trans. Linn. Soc. xxx. p. 592.

Acacia albicans, Kunth, Mim. t. 27.

Calliandra pallens, Benth.

South Mexico, Campeche (*Humboldt & Bonpland*), Zimapan (*Coulter*, 512). Hb. Kew.

3. **Pithecolobium bertolonii,** Benth. in Trans. Linn. Soc. xxx. p. 588.

Mimosa monilifera, Bertol.

Guatemala (*Velasquez*).

4. **Pithecolobium brevifolium,** Benth. in A. Gray, Pl. Wright. i. p. 67.

North Mexico, between Cerralvo and Monterey, more common in the low country (*Wislizenus*), east of Rinconada and Papagallo, also between Cerralvo and Maria (*Gregg*), in mountains near San Carlos (*Berlandier*, 2370). Hb. Kew.

5. **Pithecolobium cognatum,** Benth. in Hook. Lond. Journ. Bot. v. p. 107.

Inga cognata, Schl.

South Mexico, between Colipa and the sea (*Schiede*); Nicaragua, between Tortuga and Sapoa (*Œrsted*); Costa Rica, Guanacaste (*Œrsted*); Panama, Mamei railway-station (*S. Hayes*, 166; *Seemann*). Hb. Kew.

6. **Pithecolobium dulce,** Benth. in Hook. Lond. Journ. Bot. iii. p. 198.

Mimosa dulcis, Roxb. Coromand. Pl. i. t. 99.

Acacia obliquifolia, Mart. et Gal.

South Mexico, Acapulco (*Beechey*), near Oaxaca, at 5000 feet (*Galeotti*, 3140), Ranchos de los Huevos around Tantoyuca (*Berlandier*, 2146), Cuernavaca (*Bilimek*, 137); Guatemala (*Friedrichsthal*); Nicaragua, between Leon and Granada (*Œrsted*), Conchagua (*Hinds*), neighbourhood of Granada (*Levy*).—Colombia; also naturalized in many tropical countries. Hb. Kew.

7. **Pithecolobium filicifolium,** Benth. in Hook. Lond. Journ. Bot. iii. p. 205.

South Mexico, Jalapa (*Galeotti*), San Cristobal, region of Orizaba (*Bourgeau*, 2910; *Bilimek*, 125), neighbourhood of Vera Cruz (*Hahn*); Nicaragua, River San Juan (*Œrsted*).—West Indies. Hb. Kew.

8. **Pithecolobium fragrans,** Benth. in Hook. Lond. Journ. Bot. iii. p. 220.

Panama, Hacienda de San Juan (*Seemann*, 1190).—Jamaica; San Domingo. Hb. Kew.

9. **Pithecolobium furcatum,** Benth. in Hook. Lond. Jonrn. Bot. v. p. 106.

South Mexico, banks of the river Teapa (*Linden*, 723). Hb. Kew.

10. **Pithecolobium hymeneæfolium,** Benth. in Hook. Lond. Journ. Bot. iii. p. 198.

Pithecolobium panamense, Walp.

Panama, Isle of Taboga (*S. Hayes*, 688).—Colombia; Venezuela. Hb. Kew.

11. **Pithecolobium latifolium,** Benth. in Hook. Lond. Journ. Bot. iii. p. 214.

Panama, Chagres (*Fendler*, 87, 90), Lion-Hill railway-station (*S. Hayes*, 464).—Jamaica and northern parts of South America. Hb. Kew.

12. **Pithecolobium ligustrinum,** Kl., ex Benth. in Trans. Linn. Soc. xxx. p. 571.

Pithecolobium lanceolatum et *P. macrostachyum,* Benth.

North Mexico, San Luis Potosi to Tampico (*Palmer*, 1061); South Mexico, Manzanilla Bay (*Barclay*), near Vera Cruz (*Galeotti*, 3252; *Linden*, 1318), Passo Obejas, Tlocotalpan (*Hahn*); Yucatan and Tabasco (*Johnson*); Honduras (*Armstrong*).—Northern part of South America. Hb. Kew.

13. **Pithecolobium multiflorum,** Benth. in Hook. Lond. Journ. Bot. iii. p. 220.

Central America.—Northern part of South America and on the eastern side southward to Bahia and Minas Geraes.

14. **Pithecolobium oblongum,** Benth. in Hook. Lond. Journ. Bot. iii. p. 198.

Nicaragua, Gulf of Fonseca (*Sinclair*), without locality (*Œrsted*); Panama (*Cuming*; *S. Hayes*, 180; *Seemann*, 403).—Trinidad. Hb. Kew.

15. **Pithecolobium** (§ **Chloroleucon**) **palmeri,** Hemsl. Diag. Pl. Nov. pars 3, p. 50.

Ramis tortuosis vel flexuosis junioribus petiolisque puberulis, pinnis 1–4-jugis, foliolis 5–15-jugis minutis oblongis, stipulis spinescentibus, floribus parvis puberulis brevissime pedicellatis, legumine lato arcuato vel fere circinato.

Frutex, ramis tortuosis vel flexuosis, junioribus petiolisque puberulis, internodiis brevibus. *Folia* petiolata, bipinnata, sæpe infrapollicaria, rhachi gracili, puberula; pinnæ 1–4-jugæ, basi glandulosæ; foliola 5–15-juga, crassiuscula, oblonga, 1–2 lin. longa, basi obliqua, brevissime glanduloso-petiolulata, glabra vel glabrescentia; stipulæ spinescentes, lignosæ, rigidæ, 2–4 lin. longæ, rectæ vel curvatæ. *Flores* puberuli, capitati, brevissime pedicellati; capitula multiflora, pedunculata, pedunculis semipollicaribus; calyx lineam longus; corolla 2 lineas longa. *Legumen* sessile, coriaceum, obscure puberulum, subplanum, arcuatum vel fere circinatum, 9–12 lineas latum, ad $2\frac{1}{2}$ poll. longum, margine crassius.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 220). Hb. Kew.

This has perhaps the smallest leaves of the genus.

16. **Pithecolobium parvifolium,** Benth. in Hook. Lond. Journ. Bot. iii. p. 223.

PANAMA, Mamei railway-station (*S. Hayes*, 579), near the town of Cruces (*Seemann*, 1195).—WEST INDIES and northern parts of SOUTH AMERICA. Hb. Kew.

17. **Pithecolobium saman,** Benth. in Hook. Lond. Journ. Bot. iii. p. 216.

NICARAGUA, without exact localities (*Tate*, 93; *Œrsted*).—Northern parts of SOUTH AMERICA. Hb. Kew.

18. **Pithecolobium sophorocarpum,** Benth. in Benth. et Hook. Gen. Pl. i. p. 598.

COSTA RICA, Candelaria (*Œrsted*); NICARAGUA, Segovia (*Œrsted*). Hb. Kew.

19. **Pithecolobium,** sp.

COSTA RICA (*Endres*, 136). Hb. Kew.

111. ENTEROLOBIUM.

Enterolobium, Mart. Herb. Fl. Bras. pp. 117, 118; Benth. et Hook. Gen. Plant. i. p. 598; Benth. in Trans. Linn. Soc. xxx. p. 598.

The genus consists of five arboreous species, restricted to America.

1. **Enterolobium cyclocarpum,** Griseb. Fl. Brit. W. Ind. p. 226.

Mimosa cyclocarpa, Jacq. Fragm. t. 34. fig. 1.

NICARAGUA, neighbourhood of Granada (*Levy, Œrsted*); PANAMA, Barbacoas, "the largest tree on the isthmus" (*S. Hayes*, 120).—WEST INDIES; VENEZUELA; COLOMBIA. Hb. Kew.

2. **Enterolobium schomburgkii,** Benth. in Trans. Linn. Soc. xxx. p. 599.

PANAMA (*Seemann*, 404).—CAYENNE and BRAZIL. Hb. Kew.

3. **Enterolobium,** sp. (affinis *E. Schomburgkii*).

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1546). Hb. Kew.

112. INGA.

Inga, Willd. Sp. Plant. iv. p. 1004 (excl. sp. foliis bipinnatis); Benth. et Hook. Gen. Plant. p. 599; Benth. in Trans. Linn. Soc. xxx. p. 600.

An exclusively American genus, numbering 140 species of trees and shrubs.

1. **Inga billbergiana,** Benth. in Hook. Lond. Journ. Bot. iv. p. 585.

PANAMA, Porto Bello (*Billberg*).

2. **Inga coriacea,** G. Don, Gen. Syst. ii. p. 390.

MEXICO (*Moçino & Sessé*).

A doubtful species.

3. **Inga edulis,** Mart. Herb. Fl. Bras. p. 113; Benth. in Trans. Linn. Soc. xxx. p. 630.
SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 708); NICARAGUA, banks of the river San Juan (*Œrsted*); COSTA RICA, San José (*Œrsted*).—North part of SOUTH AMERICA. Hb. Kew.

4. **Inga elegans,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 321.
SOUTH MEXICO, woods of Misteca Alta, Oaxaca, at 7000 feet (*Galeotti*, 3235).
Not mentioned in Bentham's Monograph.

5. **Inga eriocarpa,** Benth. in Hook. Lond. Journ. Bot. iv. p. 615.
SOUTH MEXICO, between San Blas and Guadalaxara (*Coulter*).

6. **Inga flexuosa,** Schl. in Linnæa, xii. p. 559; Benth. in Trans. Linn. Soc. xxx. p. 628.
Inga schiedeana, Steud.
SOUTH MEXICO, in woods, Jalapa (*Schiede*).
Mr. Bentham thinks this may be the same as his *I. xalapensis.*

7. **Inga globulifera,** Benth. in Hook. Lond. Journ. Bot. iv. p. 585.
PANAMA, Paraiso railway-station (*S. Hayes*, 680), near the city of Panama (*Seemann*, 401).—COLOMBIA, ECUADOR. Hb. Kew.

8. **Inga hayesii,** Benth. in Trans. Linn. Soc. xxx. p. 617.
PANAMA (*S. Hayes*). Hb. Kew.

9. **Inga ingoides,** Willd. Sp. Pl. iv. p. 1012; Benth. in Trans. Linn. Soc. xxx. p. 631.
Inga ornata, Kunth, Mim. t. 14.
MEXICO, without precise locality (*Bates*).—COLOMBIA, GUIANA, and WEST INDIES. Hb. Kew.

10. **Inga insignis,** Kunth, Mim. p. 43, t. 13.
Inga pachycarpa, Benth.
COSTA RICA, Guanacaste (*Œrsted*).—BRAZIL; ECUADOR. Hb. Kew.

11. **Inga jinicuil,** Schl. in Linnæa, xii. p. 559.
SOUTH MEXICO, near Jalapa, cultivated and also apparently indigenous (*Schiede*), Orizaba (*Botteri*, 1037), without localities (*Jurgensen*, 594; *Sumichrast*, 1037); GUATEMALA, Dueñas (*Fraser*). Hb. Kew.

12. **Inga lævigata,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 320.
SOUTH MEXICO, woods of Consoquitla, near Mirador, at 1000 feet (*Galeotti*, 3287).
Name not included in Bentham's Monograph.

13. **Inga laurina,** Willd. Sp. Pl. iv. p. 1018; Benth. in Trans. Linn. Soc. xxx. p. 607.
Mimosa fagifolia, Jacq. Stirp. Amer. t. 164, nec Linn.
PANAMA, Boca Chica (*Seemann*, 1689).—Widely dispersed in the WEST INDIES. Hb. Kew.

14. **Inga leptoloba,** Schl. in Linnæa, xii. p. 560.

South Mexico, Vera Cruz (*Hahn*), valley of Cordova (*Bourgeau*, 2320), region of Orizaba (*Bourgeau*, 2396), Hacienda de la Laguna (*Schiede*), woods of Mirador and Zacuapan (*Galeotti*, 318); Costa Rica (*Œrsted*); Panama, Boquete (*Seemann*, 1690). Hb. Kew.

15. **Inga lindeniana,** Benth. in Hook. Lond. Journ. Bot. iv. p. 608.

South Mexico, Teapa (*Linden*, 726); Panama, Chagres (*Fendler*, 458).—Venezuela. Hb. Kew.

16. **Inga marginata,** Willd. Sp. Pl. iv. p. 1015, excl. synon.

Mimosa semialata, Vell. Fl. Flum. Ic. xi. t. 5.

Panama, in damp woods near Lion-Hill railway-station (*S. Hayes*, 468).—Southward to Brazil, Peru, and Bolivia. Hb. Kew.

17. **Inga membranacea,** Benth. in Trans. Linn. Soc. xxx. p. 606.

Panama, Boquete, Veraguas (*Seemann*, 1192).

18. **Inga multijuga,** Benth. in Trans. Linn. Soc. xxx. p. 615.

Panama, Chagres (*Fendler*, 51), Lion-Hill railway-station (*S. Hayes*), 645); Costa Rica, between San José and Puntarenas (*Œrsted*). Hb. Kew.

19. **Inga nitens,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 319.

South Mexico, banks of rivers, Chinantla, 1800 to 2000 feet (*Galeotti*, 3230).

Name apparently not taken up in Mr. Bentham's Monograph.

20. **Inga nobilis,** Willd. Enum. Hort. Berol. 1047; Benth. in Trans. Linn. Soc. xxx. p. 614.

Inga humboldtiana, Kunth.
Inga corymbifera, Benth.
Inga riedeliana, Benth.
Inga sericantha, Miq.

South Mexico, valley of Cordova (*Bourgeau*, 2043).—Colombia, Ecuador, Guiana, and North Brazil. Hb. Kew.

21. **Inga œrstediana,** Benth. Seem. Bot. Voy. 'Herald,' p. 117.

Costa Rica, Candelaria (*Œrsted*); Panama, Boquete, Veraguas (*Seemann*, 1191). —Colombia. Hb. Kew.

22. **Inga panamensis,** Seem. Bot. Voy. 'Herald,' p. 117.

Panama, Matachin (*S. Hayes*, 573), near the town of Cruces (*Seemann*, 407).—Colombia. Hb. Kew.

23. **Inga portobellensis,** Beurling, in Vetensk. Akad. Hand. 1854, p. 122.

Inga macrophylla, Billb.

Panama, on the coast near the port (*Billberg*).

24. **Inga punctata,** Willd. Sp. Pl. iv. p. 1016, excl. synon.
The typical plant inhabits COLOMBIA and VENEZUELA.

Var. **panamensis,** Benth. in Trans. Linn. Soc. xxx. p. 613.
PANAMA, Chagres (*Fendler*, 89), Mamei railway-station (*S. Hayes*), 357), near Cruces (*Seemann*). Hb. Kew.

25. **Inga rufescens,** Benth. in Hook. Lond. Journ. Bot. iv. p. 585.
PANAMA, Veraguas (*Hinds*).—Western COLOMBIA. Hb. Kew.

26. **Inga ruiziana,** G. Don, Gen. Syst. ii. p. 391.
Inga foliosa, Benth.
PANAMA, Bujio railway-station (*S. Hayes*, 213).—NORTH BRAZIL and EAST PERU. Hb. Kew.

27. **Inga? sericea,** Mart. et Gal. in Bull. Acad. Brux. x. pars 2, p. 318.
SOUTH MEXICO, woods of Talea and the Rincon, Oaxaca (*Galeotti*, 3418).
Not taken up in Bentham's Monograph.

28. **Inga spectabilis,** Willd. Sp. Pl. iv. p. 1017; Benth. in Trans. Linn. Soc. xxx. p. 621.
Inga fulgens, Kunth, Mim. t. 11.
PANAMA, Chagres (*Fendler*, 67).—COLOMBIA, VENEZUELA.

29. **Inga spuria,** Humb. et Bonpl. in Willd. Sp. Pl. iv. p. 1011; Kunth, Mim. t. 12.
NICARAGUA, Rio San Juan (*Œrsted*).—COLOMBIA, BRAZIL. Hb. Kew.

30. **Inga tubulifera,** Benth. in Hook. Lond. Journ. Bot. iv. p. 584.
PANAMA, Remedios (*Seemann*), without locality (*Cuming*).—COLOMBIA. Hb. Kew.

31. **Inga vera,** Willd. Sp. Pl. iv. p. 1010.
PANAMA, near Cruces (*Seemann*, 520); NICARAGUA, islets of the Lake of Nicaragua and banks of the river San Juan (*Œrsted*).—COLOMBIA and WEST INDIES. Hb. Kew.

32. **Inga? villosa,** Mart. et Gall. in Bull. Acad. Brux. x. pars 2, p. 319.
SOUTH MEXICO, cactus-hills of Tehuacan and Puebla, 5200 to 6500 feet (*Galeotti*, 3418).
Name not included in Bentham's Monograph.

33. **Inga xalapensis,** Benth. in Hook. Lond. Journ. Bot. iv. p. 616.
Inga flexuosa, Schl.?
SOUTH MEXICO, Jalapa (*Linden*, 671), without localities (*Jurgensen*, 595; *Halsted*), valley of Cordova (*Bourgeau*, 2040), Cuernavaca (*Bilimek*, 136). Hb. Kew.

34. **Inga,** sp.
SOUTH MEXICO, region of Orizaba (*Bourgeau*, 2396). Hb. Kew.

35. **Inga,** sp.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 2043 bis), region of Orizaba (*Bourgeau*, 2855). Hb. Kew.

Order XLVII. ROSACEÆ.

Rosaceæ, Benth. et Hook. Gen. Plant. i. p. 600.

This order consists of about 1000 species, belonging to seventy-five genera; but this estimate does not include the numerous forms of *Rubus*, *Rosa*, &c. which have been published by various authors as species. It is represented in nearly every region where flowering plants exist, including the extreme north.

Tribe CHRYSOBALANEÆ.

Twelve genera, comprising about 170 species, belong here. They are trees and shrubs, and are generally dispersed in tropical regions.

1. CHRYSOBALANUS.

Chrysobalanus, Linn. Gen. Plant. n. 621; Benth. et Hook. Gen. Plant. i. p. 606.

About four or five species, natives of Tropical America and Africa.

1. **Chrysobalanus ellipticus,** Smeathm. in DC. Prodr. ii. p. 526.

Chrysobalanus guianensis, Kl.

Panama, Chagres (*Fendler*, 107).—Tropical South America; also in Western Tropical Africa. Hb. Kew.

2. **Chrysobalanus icaco,** Linn., Sp. Pl. p. 513; DC. Prodr. ii. p. 525; Jacq. Amer. t. 94.

Chrysobalanus pellocarpus, Mey.

South Mexico, Acapulco (*Hinds*), without locality (*Schiede*); Nicaragua, Graytown (*Tate*, 16), Realejo (*Hinds*); Panama, Chagres (*Fendler*, 107).—Widely dispersed in the West Indies and Tropical South America; also in Western Tropical Africa. Hb. Kew.

2. LICANIA.

Licania, Aubl. Pl. Guian. i. p. 119; Benth. et Hook. Gen. Plant. i. p. 606.

Trees and shrubs. About thirty-five species, restricted to Tropical America, chiefly Brazil; one is found in the West Indies, but that only in Trinidad.

1. **Licania arborea,** Seem. Bot. Voy. 'Herald,' p. 118, t. 25.

Panama, near the town of Cruces and in Veraguas (*Seemann*, 508). Hb. Kew.

2. **Licania hypoleuca,** Benth. Bot. Voy. Sulph. p. 91, t. 32.

Panama Veraguas (*Hinds*). Hb. Kew.

3. MOQUILEA.

Moquilea, Aubl. Pl. Gnian. i. p. 521; Benth. et Hook. Gen. Plant. i. p. 606.

Trees or shrubs. About eighteen species, restricted to Tropical America.

1. **Moquilea platypus,** Hemsley, Diag. Pl. Nov. pars 1, p. 9.

Arbor, foliis glaberrimis lanceolato-oblongis acutiusculis basi cuneatis vel rotundatis, floribus cano-tomentosis breviter pedicellatis racemoso-paniculatis, paniculis amplis terminalibus ramulis valde compressis, petalis ellipticis ciliatis.

Arbor 150-pedalis, ramulis crassiusculis. *Folia* petiolata, coriacea, glaberrima, integerrima, oblonga vel anguste lanceolata, 6–10-pollicaria, acutiuscula, basi rotundata vel cuneata, supra nitida, petiolo crasso 6–7 lin. longo; stipulæ vix 1 lin. longæ, persistentes. *Flores* breviter pedicellati, fasciculati, racemoso-paniculati ad 3 lin. diametro; paniculæ terminales, 8–9 poll. (forsan sæpius ultra) longæ, ramulis cinereo-puberulis, patentibus, valde compressis. *Calyx* dense cano-tomentosus, turbinatus, 5-dentatus, dentibus late ovatis, obtusis, tubo intus strigilloso. *Petala* elliptica, ciliata, lobis calycinis longiora. *Stamina* 15, exserta, filamentis filiformibus strigillosis. *Ovarium* strigillosum. *Fructus* ignotus.

Nicaragua, neighbourhood of Granada, cultivated (*Levy*, 222); Panama? (*Cuming*, 1272). Hb. Kew.

The actual native country of this handsome tree is a little uncertain, as Cuming's specimens may have been collected further south, in Western Colombia, and Levy saw it only under cultivation.

4. HIRTELLA.

Hirtella, Linn. Gen. Plant. n. 280; Benth. et Hook. Gen. Plant. i. p. 608.

About forty species, chiefly concentrated in the Amazon region.

1. **Hirtella acayacensis,** DC. Prodr. ii. p. 529.

Mexico, mountains of Acayaca (*Moçino & Sessé*).

2. **Hirtella americana,** Aubl. Pl. Guian. p. 247, t. 98.

British Honduras (*Temple*); Guatemala (*Salvin & Godman*); Panama, Isle of Taboga (*Hinds*), without special localities (*Seemann*, *S. Hayes*).—Cayenne, Colombia, and Guiana to Brazil. Hb. Kew.

3. **Hirtella castanea,** DC. Prodr. ii. p. 528; Calques des Dess. Fl. Mex. 304.

Mexico (*Moçino & Sessé*).

4. **Hirtella dodecandra,** DC. Prodr. ii. p. 529; Calques des Dess. Fl. Mex. 302.

Mexico (*Moçino & Sessé*).

5. **Hirtella mollissima,** H. B. K. Nov. Gen. et Sp. vii. p. 263.

Panama, without locality (*Seemann*), in dense woods, Lion-Hill railway-station (*S. Hayes*, 646).—Colombia. Hb. Kew.

6. **Hirtella oblongifolia,** DC. Prodr. ii. p. 529; Calques des Dess. Fl. Mex. 303.

Mexico (*Moçino & Sessé*).

7. **Hirtella racemosa,** Lam. Dict. iii. p. 133.

PANAMA, in dark woods, very common between Panama and Chagres (*Seemann*).—Northern part of SOUTH AMERICA; ST. VINCENT and TRINIDAD.

8. **Hirtella triandra,** Sw., ex Griseb. Fl. Brit. W. Ind. p. 230.

PANAMA, Bay of Solano (*Seemann*).—From CUBA and JAMAICA to TRINIDAD, and BRAZIL.

5. LECOSTEMON.

Lecostemon, Moç. et Sessé, in DC. Prodr. ii. p. 639; Benth. et Hook. Gen. Plant. i. p. 609.

About six species, natives of Mexico, Guiana, and Brazil.

1. **Lecostemon terniflorum,** DC. Prodr. ii. p. 639; Calques des Dess. Fl. Mex. 311 et xvi. B.

MEXICO (*Moçino & Sessé*).

6. COUEPIA.

Couepia, Aubl. Pl. Guian. i. t. 519; Benth. et Hook. Gen. Pl. i. p. 608.

An exclusively Tropical-American genus, consisting of about thirty species, most numerous in Brazil.

1. **Couepia kunthiana,** Benth. MSS. in hb. Kew.

Moquilea kunthiana, Mart. et Zucc., ex Walp. Rep. ii. p. 6.
Hirtella polyandra, H. B. K. Nov. Gen. et Sp. vi. p. 246, t. 565.

SOUTH MEXICO, Acapulco (*Humboldt & Bonpland*), Teapa, Tabasco (*Linden*, 1603). Hb. Kew.

2. **Couepia,** sp.

NICARAGUA, environs of Granada (*Levy*, 42). Hb. Kew.

Tribe PRUNEÆ.

Trees and shrubs. Almost confined to the temperate and subtropical regions of the the northern hemisphere.

7. PRUNUS.

Prunus, Linn. Gen. Plant. n. 620; Benth. et Hook. Gen. Plant. i. p. 609.

About eighty species, generally dispersed in the temperate and subtropical regions of the northern hemisphere, a few extending to South America.

1. **Prunus brachybotrya,** Zucc. Pl. Nov. fasc. ii. p. 40.

MEXICO.

2. **Prunus capuli,** Cav. in Spreng. Syst. ii. p. 477; Schl. in Linnæa, xiii. pp. 89. 404.

Cerasus capuli, Ser. in DC. Prodr. ii. p. 541.
Cerasus capollin, DC. Prodr. ii. p. 539; Zucc. Pl. Nov. fasc. ii. p. 37, t. 8.

TEXAS and NEW MEXICO to—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 222), Sierra del Pajarito &c., Sonora (*Schott*; SOUTH MEXICO, Orizaba (*Botteri*, 1025), Oaxaca, at 6000 to 8000 feet (*Galeotti*, 3086), Vera Cruz and Chiapas (*Linden*, 667, 705), Pedregal, near San Angel (*Bourgeau*, 52), Real del Monte and Zimapan (*Coulter*, 89), Guanaxuato (*Hartweg*, 48); GUATEMALA, without locality (*Skinner*).—Also in COLOMBIA and PERU. Hb. Kew.

3. **Prunus demissa,** Walp. ii. p. 10.

Cerasus demissa, Nutt. in Torr. & Gray, Fl. N. Am. i. p. 411.

BRITISH COLUMBIA and OREGON to CALIFORNIA—and ? MEXICO, Volcan de Ahuarco (*Halsted*). Hb. Kew.

4. **Prunus laurifolia,** Schl. in Linnæa, xiii. p. 404.

SOUTH MEXICO, Cuesta Grande de Chiconquiaca (*Schiede*), Oaxaca (*Ghiesbreght*; *Jurgensen*, 383; *Galeotti*, 3074), Vera Cruz to Orizaba (*Müller*, 623). Hb. Kew.

5. **Prunus microphylla,** Hemsl.

Amygdalus microphylla, H. B. K. Nov. Gen. et Sp. vi. p. 243, t. 564.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 221); SOUTH MEXICO, on dry hills between Pachuca and Moran at 7800 feet (*Humboldt & Bonpland*), in steep places near El Gigante (*Hartweg*, 1602). Hb. Kew.

6. **Prunus minutiflora,** Engelm. Pl. Lindh. ii. p. 185.

NORTH MEXICO, Chihuahua (*Parry*, *Bigelow*).

7. **Prunus occidentalis,** Sw. Fl. Ind. Occ. ii. p. 925.

GUATEMALA, Volcan de Fuego (*Salvin*); PANAMA, Volcan de Chiriqui, Veraguas (*Seemann*).—WEST INDIES. Hb. Kew.

8. **Prunus salicifolia,** H. B. K. Nov. Gen. et Sp. vi. p. 241, t. 563.

SOUTH MEXICO, Tlalpuxahua (*Graham*).—COLOMBIA, ECUADOR, and PERU. Hb. Kew.

9. **Prunus samydoides,** Linnæa, xiii. p. 404; Hook. Ic. Pl. t. 371.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 2295), Jalapa, 3000 feet (*Galeotti*, 7081), Cerrania de Zoncoantla, near Jalapa (*Schiede*). Hb. Kew.

10. **Prunus virginiana,** Linn. Sp. Pl. i. p. 473.

NEWFOUNDLAND and SASKATCHEWAN to—NORTH MEXICO. Hb. Kew.

11. **Prunus,** sp.

SOUTH MEXICO, San Nicolas, valley of Cordova (*Bourgeau*, 1000). Hb. Kew.

12. **Prunus,** sp.

SOUTH MEXICO, Omealca (*Bourgeau*, 3122). Hb. Kew.

Tribe SPIRÆEÆ.

This tribe consists of herbs and shrubs, restricted to the northern hemisphere, and almost exclusively to temperate regions. Most numerous in North America and North-eastern Asia.

8. SPIRÆA.

Spiræa, Linn. Gen. Plant. n. 630; Benth. et Hook. Gen. Plant. i. p. 611; Maxim. Adnot. de Spiræac. in Act. Horti Petrop. vi.

About fifty herbaceous and shrubby species, ranging all round the north temperate zone, and less numerously represented in the mountains within the tropics. Maximowicz (*loc. cit.*) very much circumscribes the genus.

1. **Spiræa cæspitosa,** Nutt. in Torr. et Gray, Fl. N. Am. i. p. 418; Maxim. Adnot. de Spiræac. p. 71.

Western side of North America in the ROCKY MOUNTAINS southward to—NORTH MEXICO, Chihuahua (*Bigelow*). Hb. Kew.

2. **Spiræa discolor,** Pursh, Fl. Am. Sept. i. p. 342; Maxim. Adnot. de Spiræac. p. 150, sub *Holodisco.*

Spiræa ariæfolia, Sm. in Rees's Cycl. xxxiii. n. 16.
Spiræa dumosa, Nutt. ex Torr. in Bot. Stansbury's Exped. Salt Lake, p. 387, t. 4.
Spiræa fissa, Lindl. Bot. Reg. 1842, Misc. p. 1.
Spiræa argentea, Benth. Pl. Hartw. p. 82, nec Mut.
Spiræa mexicana, Schiede in Regel, Ind. Sem. Hort. Petr. 1857.

OREGON and COLUMBIA RIVER southward.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 223); SOUTH MEXICO, peak of Orizaba, 10,000 to 12,000 feet (*Liebmann*; *Galeotti*, 3084; *Linden*, 663), valley of Mexico (*Bourgeau*, 267), Chiapas (*Ghiesbreght*); GUATEMALA, pine-forests, 10,000 to 11,500 feet (*Salvin & Godman*), near the city of Guatemala (*Hartweg*), without locality (*Friedrichsthal*). Hb. Kew.

We have followed Maximowicz in referring the variable Mexican forms of *Spiræa* bearing the above names to *S. discolor*, Pursh.

3. **Spiræa parvifolia,** Benth. Pl. Hartw. p. 36; Maxim. Adnot. de Spiræac. p. 71.

SOUTH MEXICO, Puente del Dios (*Hartweg*, 284). Hb. Kew.

Tribe QUILLAJEÆ.

This tribe is composed of about twelve shrubby and arboreous species, belonging to eight genera. All the genera are American, as well as the species, with the exception of two species of *Eucryphia* found in Australia. They range from New Mexico to Chili.

9. VAUQUELINIA.

Vauquelinia, Correa in Humb. et Bonpl. Pl. Æquin. i. p. 141; Benth. et Hook. Gen. Pl. i. p. 615.

The genus is limited to the species below, one of which is a tree and the others shrubs.

1. **Vauquelinia corymbosa,** Corr. in Humb. et Bonpl. Pl. Æquin. i. p. 141, t. 40.

South Mexico, near Actopan, at 6250 feet (*Humboldt & Bonpland*), Oaxaca (*Ghiesbreght*). Hb. Paris.

2. **Vauquelinia karwinskyi,** Maxim. Adnot. de Spiræac. p. 132.

South Mexico (*Karwinski*, 213).

3. **Vauquelinia torreyi,** S. Watson in Proc. Am. Acad. xi. p. 147.

Vauquelinia corymbosa, Torr. Bot. Mex. Bound. p. 64, nec Correa.
Spiræa californica, Torr. in Emory's Rep. p. 140.

California; Arizona.—North Mexico, Sierra Verde (*Schott*).

10. PTEROSTEMON.

Pterostemon, Schauer in Linnæa, xx. p. 736; Benth. et Hook. Gen. Plant. i. p. 615.

Limited to this one shrubby species:—

1. **Pterostemon mexicanus,** Schauer in Linnæa, xx. p. 736.

South Mexico, Zimapan (*Coulter*, 75, 85; *Aschenborn*, 259), without locality (*Galeotti*, 3110). Hb. Kew.

11. LINDLEYA.

Lindleya, H. B. K. Nov. Gen. et Sp. vi. p. 239; Benth. et Hook. Gen. Plant. i. p. 615.

One arboreous species.

1. **Lindleya mespiloides,** H. B. K. Nov. Gen. et Sp. vi. p. 240, t. 562 bis.

North Mexico, Saltillo and Buena Vista (*Gregg*); South Mexico, Zimapan (*Coulter*, 76, 79), near Oaxaca (*Galeotti*, 7124), between Zimapan and San José del Oro, in woods (*Schiede*), very abundant between La Puente de la Madre de Dios, and the village of Magdalena, 6950 feet (*Humboldt & Bonpland*). Hb. Kew.

Tribe RUBEÆ.

Comprising only the genus *Rubus*.

12. RUBUS.

Rubus, Linn. Gen. Plant. n. 632; Benth. et Hook. Gen. Plant. i. p. 616; Focke, Batographische Abhandl. in Abhandl. h. v. naturwissenschaftlichen Vereine Bremen, iv.

Herbaceous and shrubby plants. Botanists variously estimate the number of species from 100 to 500; and these are scattered over the whole range of the order.

1. **Rubus adenotrichus,** Ch. et Schl. in Linnæa, xiii. p. 267; Focke, Batograph. Abhandl. p. 150.

South Mexico, region of Orizaba and valley of Cordova (*Bourgeau*, 2861), Barranca del Fortin and Alpatlahua (*Liebmann*), Hacienda del Carmen (*Hartweg*), without locality (*Jurgensen*, 349). Hb. Kew.

2. **Rubus coriifolius,** Liebm. in Vidensk. Meddel. 1853, p. 157; Focke, Batograph. Abhandl. p. 149.

South Mexico, Alpatlahua, Tomatlan, and Mirador (*Liebmann*). Hb. Kew.

3. **Rubus costa-ricanus,** Liebm. in Vidensk. Meddel. 1853, p. 159; Focke, Batograph. Abhandl. p. 150.

Costa Rica, near Cartago (*Ærsted*).

4. **Rubus eriocarpus,** Liebm. in Vidensk. Medd. 1853, p. 162; Focke, Batograph. Abhandl. p. 147.

South Mexico, Chinantla (*Liebmann*). Hb. Kew.

5. **Rubus fagifolius,** Ch. et Schl. in Linnæa, v. p. 571; Focke, Batograph. Abhandl. p. 149.

South Mexico, Colipa, Vera Cruz (*Liebmann*), thickets, Papantla (*Schiede*). Hb. Kew.

6. **Rubus floribundus,** H. B. K. Nov. Gen. et Sp. vi. p. 219, t. 557; Focke, Batograph. Abhandl. p. 152.

South Mexico, Mirador, Jalapa, and Chiapas (*Linden*, 655, 666, 710), Jalapa (*Galeotti*, 3090); Panama, Veraguas (*Seemann*).—Colombia to Ecuador. Hb. Kew.

7. **Rubus humistratus,** Steud. ex Liebm. in Vidensk. Meddel. 1853, p. 163 Focke, Batograph. Abhandl. p. 153.

Rubus humifusus, Schl. in Linnæa, xiii. p. 270.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 224); South Mexico, Chinantla, Puebla (*Liebmann*), Toluca (*Andrieux*, 392), in thickets and grassy places, Jalapa, and near San Miguel (*Schiede*), Orizaba (*Botteri*, 1833). Hb. Kew.

8. **Rubus irasuensis,** Liebm. in Vidensk. Meddel. 1853, p. 156; Focke, Batograph. Abhandl. p. 150.

Costa Rica, Volcan Irazu (*Liebmann*).

9. **Rubus jamaicensis,** Linn. Mant. p. 75; Focke, Batograph. Abhandl. p. 151.

Central America (ex *Focke*).—Jamaica.

10. **Rubus liebmanniii,** Focke, Batograph. Abhandl. p. 159.

South Mexico, Barranca del Rey (*Uhde*, 1260). Hb. Berol.

11. **Rubus miser,** Liebm. in Vidensk. Meddel. 1853, p. 156; Focke, Batograph. Abhandl. p. 150.

Costa Rica, near Cartago, 6000 feet (*Œrsted*).

12. **Rubus occidentalis,** Linn. Sp. Pl. p. 706; Focke, Batograph. Abhandl. p. 147.

Common in Eastern North America from Canada southward.—Guatemala, Volcan de Fuego, 10,500 feet (*Salvin*); Panama, Boquete, Veraguas (*Seemann*, 1670). Hb. Kew.

13. **Rubus pumilus,** Focke, Batograph. Abhandl. p. 155.

South Mexico, San Andres (*Christmann*). Hb. Berol.

[14. **Rubus rosæfolius,** Sm. Ic. Pl. t. 60.

A widely dispersed species in Asia and Australia; introduced into Cenlral America and South Mexico, Orizaba (*Bourgeau*).]

15. **Rubus sapidus,** Schl. in Linnæa, xiii. p. 269; Focke, Batograph. Abhandl. p. 153.

South Mexico, common in thickets, Jalapa (*Schiede*); Central America (*Focke*).

16. **Rubus scandens,** Liebm. in Vidensk. Meddel. 1853, p. 154; Focke, Batograph. Abhandl. p. 148.

South Mexico, Mirador (*Liebmann*). Hb. Kew.

17. **Rubus schiedeanus,** Steud., ex Liebm. in Vidensk. Meddel. 1853, p. 155.

Rubus dumetorum, Schl. in Linnæa, xiii. p. 267, nec Weihe et alior.

South Mexico, Mirador (*Liebmann*), at 3000 to 4500 feet (*Heller*), woods at 3000 to 4000 feet in the Cordillera of Vera Cruz (*Galeotti*, 3072), thickets, Jalapa (*Schiede*); Central America (*Focke*). Hb. Kew.

18. **Rubus strigosus,** Michx. Fl. Am. Bor. i. p. 297; Focke, Batograph. Abhandl. p. 147.

Canada and Saskatchewan southward to—North Mexico, rancho of Guadalupe, on the road from Mazatlan to Durango (*Seemann*); South Mexico, damp places, peak of Orizaba (*Galeotti*, 3082), woods at Santa Fé (*Bourgeau*, 696). Hb. Kew.

19. **Rubus tiliæfolius,** Focke, Batograph. Abhandl. p. 159.

Rubus tiliaceus, Liebm., nec Smith nec Seemann.

South Mexico, Chinantla (*Liebmann*).

20. **Rubus trichomallus,** Schl. in Linnæa, xiii. p. 268.

South Mexico, Hacienda de la Laguna (*Schiede*).

Possibly the same as *R. urticæfolius,* Poir.

21. **Rubus trilobus,** Moç. et Sessé in DC. Prodr. ii. p. 566; Calques des Dess. Fl. Mex. p. 290.

South Mexico, in the lower part of Monte San Felipe (*Andrieux*, 393), San Felipe, at 7000 feet (*Liebmann*), on the Cumbre between Oaxaca and the Sierra or mining district (*Hartweg*), peak of Orizaba, at 10,000 feet (*Liebmann*), Misteca Alta, 7500 to 9000 feet (*Galeotti*, 3098), Chiapas (*Ghiesbreght*, 509), without localities (*Jurgensen*, 270; *Sallé*). Hb. Kew.

Seemann (Bot. Voy. 'Herald') refers *R. neomexicanus*, A. Gray, to this, which would give it a much wider range.

22. **Rubus trivialis,** Michx. Fl. Bor.-Am. i. p. 296.

Rubus flagellaris, Hook. et Arn. nec Willd.

Texas; New Mexico; Arkansas; California.—North Mexico, Sonora (*Thurber*, 263). Hb. Kew.

23. **Rubus uhdeanus,** Focke, Batograph. Abhandl. p. 159.

Mexico (*Uhde*, 1259). Hb. Berol.

24. **Rubus urticæfolius,** Poir. Dist. vi. p. 246; Focke, Batograph. Abhandl. p. 149.

Panama, Veraguas (*Seemann*, 1152).—Widely spread in Tropical South America. Hb. Kew.

25. **Rubus villosus,** Ait. Hort. Kew. ed. 1, ii. p. 210; Focke, Batograph. Abhandl. p. 153.

Eastern North America.—And Central America (*Focke*).

26. **Rubus,** sp.

South Mexico, Zimapan (*Coulter*, 91). Hb. Kew.

27. **Rubus,** sp.

South Mexico, Chiapas (*Linden*, 711). Hb. Kew.

28. **Rubus,** sp.

South Mexico, forests of the Desierto Viejo, near Mexico (*Bourgeau*, 1184). Hb. Kew.

Tribe POTENTILLEÆ.

Generally dispersed in temperate and cold regions.

13. CERCOCARPUS.

Cercocarpus, H. B. K. Nov. Gen. et Sp. vi. p. 232; Benth. et Hook. Gen. Plant. i. p. 618.

About four or five species of small trees and shrubs, restricted to the southern, central, and western territory of the United States and Mexico.

1. **Cercocarpus breviflorus,** A. Gray, Pl. Wright. ii. p. 54.

New Mexico.—North Mexico, Fronteras (*Wright*). Hb. Kew.

2. **Cercocarpus fothergilloides,** H. B. K. Nov. Gen. et Sp. vi. p. 233, t. 559.

North Mexico, Sierra Madre (*Seemann*, 1979); South Mexico, Orizaba (*Botteri*,

941; *Bilimek*, 146), Guanaxuato (*Hartweg*), Zimapan (*Coulter*, 83), Cuesta de San Juan del Estado, Oaxaca, at 7500 feet (*Liebmann*), Misteca Alta, 7000 feet, and Real del Monte, 7500 feet (*Galeotti*, 3070, 3109), Mineral del Monte, near San Pedro and San Pablo (*Ehrenberg*). Hb. Kew.

3. **Cercocarpus parvifolius,** Nutt. in Torr. & Gray, Fl. N. Am. i. p. 427.

Cercocarpus betulæfolius, Nutt. in Hook. Ic. Pl. t. 322.
Cercocarpus betuloides, Torr. et Gray.

Rocky Mountains, in the Wyoming Territory; southward through Utah, California, and Texas to—North Mexico, San Luis Potosi (*Virlet d'Aoust*; *Parry & Palmer*, 225). Hb. Kew.

The Mexican plant may be specifically different; but we refrain from describing it on account of the evident variability of the true *C. parvifolius*. Parry and Palmer's specimen has only two lateral nerves on each side of the midrib of the leaves.

14. COWANIA.

Cowania, Don in Trans. Linn. Soc. xiv. p. 574; Benth. et Hook. Gen. Plant. i. p. 618.

The genus consists of three or four shrubby species restricted to Mexico and the countries immediately to the north.

1. **Cowania mexicana,** Don in Trans. Linn. Soc. xiv. p. 575, t. 22. figg. 1–6.

Geum? *dryadoides,* DC. Prodr. ii. p. 554; Calques des Dess. Fl. Mex. 297.

North Mexico, Sierra Madre (*Seemann*, 2176), Sonoita (*Wright*), various parts of Sonora (*Torrey*); South Mexico, Guanaxuato (*Hartweg*, 108). Hb. Kew.

2. **Cowania plicata,** Don in Sweet's Brit. Fl. Gard. series 2, t. 400.

Cowania purpurea, Sieb. et Zucc. in Abhandl. baier. Akad. Wissen. iv. pars 2, p. 7, t. 2.
Greggia purpurea, Engelm.

North Mexico, uplands of Mexico (*Colquhoun*), San Luis Potosi (*Virlet d'Aoust*), at 6000 to 8000 feet (*Parry & Palmer*, 226). Hb. Kew.

15. FALLUGIA.

Fallugia, Endl. Gen. Plant. p. 1246; Benth. et Hook. Gen. Plant. i. p. 618.

The only species, a shrub:—

1. **Fallugia paradoxa,** Endl. ex Torr. in Emory's Rep. p. 139, t. 2.

Geum? *cercocarpoides,* DC. Prodr. ii. p. 554; Calques des Dess. Fl. Mex. 296.
Sieversia paradoxa, Don in Trans. Linn. Soc. xiv. p. 576, t. 22. figg. 7–10.
Greggia rupestris, Engelm.

Utah, Texas, New Mexico, and California to—North Mexico, abundant (*Gregg*). Hb. Kew.

16. GEUM.

Geum, Linn. Gen. Plant. n. 636; Benth. et Hook. Gen. Plant. i. p. 619.

About thirty herbaceous species, widely diffused in both north and south temperate and cold regions; only one, however, indigenous in South Africa.

1. **Geum virginianum,** Linn. Sp. Pl. p. 716.

Eastern and Southern States of North America.—Mexico, valley of Mexico (*Schaffner*, 134), Tizapan (*Bourgeau*, 51), Zacualtipan (*Berlandier*, 361). Hb. Kew.

2. **Geum album,** Gmel. in Ind. iii. Sem. Hort. Petrop. p. 34, ex Schl. in Linnæa, xiii. p. 265.

South Mexico, in woods near Jalapa (*Schiede & Deppe*), Mineral del Monte (*Ehrenberg*).

17. FRAGARIA.

Fragaria, Linn. Gen. Plant. n. 633; Benth. et Hook. Gen. Plant. i. p. 620.

This genus has a wide range in cold and temperate regions of the north, and in the mountains of South America and the Isle of Bourbon. The forms are numerous; but Bentham and Hooker estimate the number of species at only three or four. All of them are herbaceous. Perhaps the form below should be regarded as a variety of the widely dispersed *F. vesca*, Linn.

1. **Fragaria mexicana,** Schl. in Linnæa, xiii. p. 265.

Fragaria vesca, Linn., ex Benth. Pl. Hartw. p. 309, et Seem. Bot. Voy. 'Herald,' p. 282.

North Mexico, common in the Sierra Madre (*Seemann*, 2178); South Mexico, Chinantla, Puebla (*Liebmann*), Zimapan (*Coulter*, 94), near Jalapa; San Salvador, la Encarnacion, and Atotonilco el Chico (*Schiede*); Mineral del Monte (*Ehrenberg*).—Colombia. Hb. Kew.

18. POTENTILLA.

Potentilla, Linn. Gen. Plant. n. 634; Benth. et Hook. Gen. Plant. i. p. 620.

About 120 herbaceous and shrubby species, mostly natives of the frigid and temperate regions of the north. A few species occur in the mountains of tropical countries; and two northern species are also rather widely dispersed in the south.

1. **Potentilla candicans,** Humb. et Bonpl., ex Nestl. Monog. Pot. p. 34, t. 3. fig. 2, et t. 4. fig. 2.

Potentilla lineariloba, Ser. in DC. Prodr. ii. p. 582; Calques des Dess. Fl. Mex. 298.
Potentilla humboldtiana, Tratt.

South Mexico.

Var. *α*. In elevated shady places near the village of Tianguillo, between Mexico and Toluca, 9000 feet (*Humboldt & Bonpland*).

Var. β. Near the village of San Augustin de la Cuevas &c., 8400 feet (*Humboldt & Bonpland*).

From the following localities, without distinction of varieties:—

Jalapa (*Coulter*, 69), Nevada de Toluca (*Galeotti*, 563), plain of Toluca (*Schiede*). Hb. Kew.

2. **Potentilla comaroides,** Nestl. Monog. Pot. p. 62, t. 4. fig. 3.

South Mexico, Mount Jorullo (*Humboldt & Bonpland*), Trapujahua (*Keerl*). Hb. Kew.

3. **Potentilla ehrenbergiana,** Schl. in Linnæa, xiii. p. 261.

South Mexico, near Huajalote, region of Mineral del Monte (*Ehrenberg*).

4. **Potentilla hæmatochrous,** Lehm. Add. ad Ind. Sem. Hort. Hamb. 1836, Collect. p. 6; Monogr. Pot. p. 110; Knowles et Westc. Fl. Cab. iii. t. 119.

Potentilla fusca, Schl. in Linnæa, xiii. p. 262.

South Mexico, in alpine meadows, Cumbre de las Papas (*Schiede*), Mineral del Monte (*Ehrenberg*), valley of Toluca (*Schiede*).

5. **Potentilla leptopetala,** Lehm. in Flora, i. 1831, p. 133.

Potentilla hiemalis, Schl. et Ch.

South Mexico, Cruz Blanca (*Schiede & Deppe*), plain of Toluca (*Schiede*), Real del Monte (*Coulter*, 73), Mineral del Monte (*Ehrenberg*), Chiapas (*Ghiesbreght*). Hb. Kew.

6. **Potentilla ovalis,** Lehm. Add. ad Ind. Sem. Hort. Hamb. 1849, Collect. p. 9, Ic. Potent. t. 50.

Mexico.

7. **Potentilla paradoxa,** Nutt. in Torr. et Gray, Fl. N. Am. i. p. 437; Lehm. Revis. Potent. in Nov. Act. Leopold. Cæs. xxiii. (suppl.) p. 194, t. 62.

Missouri, Oregon, &c., southward to—North Mexico.

8. **Potentilla ranunculoides,** H. B. K. Nov. Gen. et Sp. vi. p. 216; Nestl. Potent. p. 56, t. 3. fig. 1.

Potentilla macrorhiza, Lehm.

South Mexico, Cerro de las Cruces, between La Puebla and the city of Mexico, 10,000 feet (*Humboldt & Bonpland*), peak of Orizaba (*Linden*, 662), at 12,000 feet (*Galeotti*, 3077), Desierto Viejo (*Bourgeau*, 1050). Hb. Kew.

9. **Potentilla richardii,** Lehm. Add. ad Ind. Sem. Hort. Hamb. 1849, Collect. p. 6; Monog. Pot. p. 26.

Potentilla ancistrifolia, Galeotti, nec Bunge.

South Mexico, peak of Orizaba, at 12,500 feet (*Linden*, 661). Hb. Kew.

Tribe POTERIEÆ.

Nearly the distribution of the order.

19. ALCHEMILLA.

Alchemilla, Linn. Gen. Plant. n. 165; Benth. et Hook. Gen. Plant. i. p. 622.

About thirty species, having their maximum concentration in the Andes of America from Mexico to Chili. A few are dispersed over the temperate and frigid regions of the Old World, including the mountains of India and Tropical and South Africa and Australia.

1. **Alchemilla hirsuta,** H. B. K. Nov. Gen. et Sp. vi. p. 224.

Var. *α.* **campestris.**

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 721); South Mexico, in grassy places near Jalapa (*Schiede & Deppe*; *Linden*, 103).

Var. *β.* **alpestris.**

South Mexico, Mount Orizaba (*Schiede & Deppe*).—Andes of South America. Hb. Kew.

2. **Alchemilla orbiculata,** Ruiz et Pav. Fl. Peruv. i. p. 68.

South Mexico, Chiapas (*Ghiesbreght*, 613), pastures in the region of Orizaba (*Bourgeau*, 2505), Ciudad Real and Jalapa (*Linden*, 706, 103), Totontepec, Oaxaca (*Liebmann*), peak of Orizaba, 12,000 feet (*Galeotti*, 558).—Andes of South America. Hb. Kew.

3. **Alchemilla pectinata,** H. B. K. Nov. Gen. et Sp. vi. p. 226.

South Mexico, in woods near Jalapa and San Andres (*Schiede & Deppe*), Toluca (*Berlandier*, 1078).—Colombia. Hb. Paris.

4. **Alchemilla sibbaldiæfolia,** H. B. K. Nov. Gen. et Sp. vi. p. 225, t. 561.

North Mexico, Sierra Madre (*Seemann*, 2179), San Luis (*Virlet d'Aoust*), 6000 to 8000 feet (*Parry & Palmer*, 227); South Mexico, valley of Mexico (*Bourgeau*, 308), Zimapan (*Coulter*, 72), peak of Orizaba, 9000 to 12,000 feet (*Galeotti*, 559), near Tianguillo, between Toluca and the city of Mexico, 9000 feet (*Humboldt & Bonpland*); Guatemala, without locality (*Friedrichsthal*), Volcan de Agua, 10,000 feet (*Salvin & Godman*).—Andes of South America. Hb. Kew.

5. **Alchemilla tripartita,** Ruiz et Pav. Fl. Peruv. i. p. 68.

North Mexico, San Luis (*Virlet d'Aoust*); South Mexico, peak of Orizaba, 14,000 to 15,300 feet (*Liebmann*), Real del Monte (*Coulter*, 71), Santa Fé and Pedregal, near Mexico (*Bourgeau*, 308, 311), near San Angel (*Schaffner*).—Andes of South America. Hb. Kew.

6. **Alchemilla venusta,** Schl. et Ch. in Linnæa, v. p. 573.

South Mexico, without any precise locality (*Schiede & Deppe*).

7. **Alchemilla vulcanica,** Schl. et Ch. in Linnæa, v. p. 573.
South Mexico, Mount Orizaba (*Schiede & Deppe*), without locality (*Aschenborn*).

8. **Alchemilla,** sp. (*A. tripartitæ* affinis).
South Mexico, Chiapas (*Ghiesbreght*). Hb. Kew.

9. **Alchemilla,** sp.
Mexico (*Sallé*, 2). Hb. Kew.

20. AGRIMONIA.

Agrimonia, Linn. Gen. Plant. n. 607; Benth. et Hook. Gen. Plant. i. p. 622.

About twenty herbaceous species have been described; but Bentham and Hooker estimate there may not be more than six or eight distinct ones. They are generally diffused in the temperate regions of the northern hemisphere and in South America.

1. **Agrimonia parviflora,** Ait. Hort. Kew. ed. 1, ii. p. 130.
Southern States of North America.—South Mexico, Vera Cruz (*Liebmann*), in thickets near Jalapa (*Schiede & Deppe*). Hb. Kew.

2. **Agrimonia,** sp.
South Mexico, Orizaba (*Botteri*, 826). Hb. Kew.

21. ACÆNA.

Acæna, Linn. Mant. 200; Benth. et Hook. Gen. Plant. i. p. 623.

About thirty herbaceous species, principally natives of the temperate and cold regions of the southern hemisphere, but extending northward in America to Mexico and California.

1. **Acæna agrimonioides,** H. B. K. Nov. Gen. et Sp. vi. p. 231.
South Mexico, near Tianguillo, 9000 feet (*Humboldt & Bonpland*).

2. **Acæna elongata,** Linn. Mant. p. 200.
South Mexico, peak of Orizaba, 10,000 to 12,000 feet (*Liebmann*; *Linden*, 1402; *Galeotti*, 3081); Guatemala, top of Volcan de Fuego (*Salvin & Godman*, 250).—Colombia. Hb. Kew.

3. **Acæna lappacea,** Ruiz et Pav. Fl. Peruv. i. p. 66, t. 103. fig. *a*.
South Mexico, Real del Monte (*Coulter*, 74), forest of the Desierto Viejo (*Bourgeau*, 309).—Andes of South America. Hb. Kew.

4. **Acæna lævigata,** Vahl, Enum. i. p. 297.
Ancistrum lævigatum, Lag.
South Mexico, in woods on Mount Orizaba at Anganguio (*Schiede*), Mineral del Monte (*Ehrenberg*).—Patagonia.

Tribe ROSEÆ.

Restricted to the genus *Rosa*.

22. ROSA.

Rosa, Linn. Gen. Plant. n. 631; Benth. et Hook. Gen. Plant. i. p. 625.

This genus presents an immense variety of slightly different forms, which some botanists regard as species, hundreds of which have been described; but there are probably not more than fifty distinct types. They are generally dispersed in the temperate and subalpine regions of the northern hemisphere, reaching their southern limits in Mexico, Abyssinia, and the eastern peninsula of India. Several double-flowered varieties are more or less naturalized in some parts of Mexico.

1. **Rosa blanda,** Ait. Hort. Kew. ed. 1, ii. p. 202.

Widely spread in North America from CANADA and the extreme NORTH-WEST southwards to the Mexican boundary, and probably in NORTH MEXICO.

2. **Rosa montezumæ,** Red. Roses, p. 55, t. 16.

SOUTH MEXICO, Zimapan (*Coulter*, 96), San Angel (*Bourgeau*, 49), Real del Monte (*Hartweg*), around Toluca (*Andrieux*, 394), Mineral del Monte (*Ehrenberg*), in oak-woods between the city of Mexico and Moran, near the mine of San Pedro, at 8760 feet (*Humboldt & Bonpland*), Real del Monte, 7500 feet (*Galeotti*, 3108). Hb. Kew.

Schlechtendal refers this to *R. canina*, Linn.

Tribe POMEÆ.

Trees and shrubs. Upwards of 150 species, belonging to nine genera. With the exception of the genus *Osteomeles*, which is represented in the Andes of South America, from Colombia to Peru, by about eight or ten species, this tribe is restricted to the northern hemisphere, and chiefly to temperate regions.

23. CRATÆGUS.

Cratægus, Linn. Gen. Plant. n. 622; Benth. et Hook. Gen. Plant. i. p. 626.

About thirty species, dispersed all round the north temperate zone.

1. **Cratægus crus-galli,** Linn. Sp. Pl. p. 632; DC. Prodr. ii. p. 626.

CANADA southwards.—SOUTH MEXICO, Santa Fé (*Bourgeau*, 50). Hb. Kew.

2. **Cratægus mexicana,** DC. Prodr. ii. p. 629; Calques des Dess. Fl. Mex. 299.

NORTH MEXICO, San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 228); SOUTH MEXICO, Teocote (*Graham*), Vera Cruz (*Linden*, 656), Jalapa (*Galeotti*), Orizaba (*Botteri*, 831), without locality (*Gregg*, *Christy*). Hb. Kew.

3. **Cratægus pubescens,** Steud. Nomencl. Bot. i. p. 433.

Mespilus pubescens, H. B. K. Nov. Gen. et Sp. vi. p. 213, t. 555.

North Mexico, about Durango, wild, also cultivated for its fruit (*Seemann*); South Mexico, Real del Monte (*Coulter*, 84), near Moran, 7980 feet (*Humboldt & Bonpland*), Texojote and Chinantla (*Liebmann*), Chiapas (*Ghiesbreght*, 630), Zimapan (*Aschenborn*), woods, Jalapa (*Schiede*). Hb. Kew.

4. **Cratægus stipulosa,** Steud. Nomencl. Bot. i. p. 434.

Mespilus stipulosa, H. B. K. Nov. Gen. et Sp. vi. p. 213.

South Mexico, Chilco (*Hall*), without locality (*Bates*); Guatemala, without locality (*Skinner*).—Peru. Hb. Kew.

5. **Cratægus subserrata,** Benth. Pl. Hartw. p. 10.

South Mexico, Guanaxuato (*Hartweg*, 47). Hb. Kew.

6. **Cratægus,** sp. ("vix *C. mexicanæ* var.").

South Mexico, Ciudad Real (*Linden*, 708). Hb. Kew.

24. COTONEASTER.

Cotoneaster, Medik, ex Lindley in Trans. Linn. Soc. xiii. p. 101; Benth. et Hook. Gen. Plant. i. p. 627.

About fifteen species, most numerous in the mountains of Northern India.

1. **Cotoneaster denticulata,** H. B. K. Nov. Gen. et Sp. vi. p. 214, t. 556.

Nagelia denticulata, Lindl.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 230); South Mexico, very common on sandstone hills near Regla (*Hartweg*), Chiapas (*Ghiesbreght*, 812), Tacubaya (*Bourgeau*, 268), Oaxaca (*Liebmann*; *Galeotti*, 3092), Misteca Alta, 7000 feet (*Galeotti*, 7186). Hb. Kew.

Var. **latifolia.**

South Mexico, Comitan, Chiapas (*Linden*, 704; *Ghiesbreght*, 508), Mineral del Monte (*Ehrenberg*), Malpays de la Joya (*Schiede*). Hb. Kew.

25. PHOTINIA.

Photinia, Lindl. in Trans. Linn. Soc. xiii. p. 103; Benth. et Hook. Gen. Plant. i. p. 627.

About twenty shrubby and arboreous species, chiefly natives of the mountains of Northern India and China and Japan, and one or two of California and Mexico.

1. **Photinia mexicana,** Hemsley.

Chamæmeles mexicana, Baill. Adansonia, ix. p. 148.

South Mexico, woods near Vera Cruz (*Galeotti*, 1660; *Linden*, 382). Hb. Kew.

Baillon, who does not appear to have seen the cotyledons of this plant, refers it to the otherwise monotypic Madeiran genus, which has convolute cotyledons.

Order XLVIII. SAXIFRAGACEÆ.

Saxifrageæ, Benth. et Hook. Gen. Plant. i. p. 629.

About seventy-five genera, embracing 550 species, are referred to this order. There are herbaceous, shrubby, and arboreous species; and they grow chiefly in the temperate and frigid regions of the northern hemisphere, less numerous in the south, and very few in the tropics.

Tribe SAXIFRAGEÆ.

This tribe is the most numerous in species; and they are all herbaceous plants.

1. SAXIFRAGA.

Saxifraga, Linn. Gen. Plant. n. 559; Benth. et Hook. Gen. Plant. i. p. 635.

A genus of about 160 species, almost confined to the temperate and frigid regions of the northern hemisphere, where they are generally diffused. A few species occur in South America; but the genus is not represented either in South Africa, Australia, or the Pacific islands.

1. **Saxifraga,** sp.

South Mexico, rocks at 7000 feet in the Cordillera of Oaxaca (*Galeotti*, 2836; *Ghiesbreght*, 119). Hb. Paris.

2. **Saxifraga,** sp.

North Mexico, San Luis (*Virlet d'Aoust*, 1005). Hb. Paris.

These plants bear manuscript names under this genus in the Paris Herbarium.

2. HEUCHERA.

Heuchera, Linn. Gen. Plant. n. 320; Benth. et Hook. Gen. Plant. i. p. 638.

About twenty-four species, restricted to North America, ranging from Mexico nearly up to the arctic regions.

1. **Heuchera longipetala,** Ser. (char. amplif.).

Ferrugineo-pilosa, foliis cordato-orbicularibus obscurissime lobatis aristulato-dentatis, floribus parvis cymoso-paniculatis, scapis pedicellisque gracilibus, calyce albo-glanduloso-hirsuto anguste campanulato, lobis inæqualibus, petalis linearibus quam calycis lobi duplo longioribus, staminibus exsertis.

Herba perennis, scaposus, 9–18-pollicaris, ferrugineo-pilosa, pilis breviusculis. *Folia* longe (3–5-poll.) graciliterque petiolata; lamina membranacea, cordato-orbicularis, 1–2 poll. diametro, obscurissime lobata, sæpe subquinquenervis, aristulato-dentata, utrinque plus minusve appresse pilosa, supra demum glabrescens; stipulæ parvæ, fimbriatæ. *Flores* ad 3 lineas longi, anguste cymoso-paniculati; scapus gracilis, infra medium 2–3-bracteatus, bracteis parvis; calyx albo-

glanduloso-hirsutus, anguste campanulatus, 2–2½ lineas longus, lobis inæqualibus valde obtusis vel rotundatis; petala linearia, lobis calycinis duplo longiora; stamina exserta; ovarii pars superior libera, glabra; styli breviusculi, divergentes.—*H. longipetala,* Ser. in DC. Prodr. iv. p. 52; Calques des Dess. Fl. Mex. 423.

South Mexico, in mountains above Toluca (*Andrieux*, 356). Hb. Kew.

We have referred Andrieux's specimens to *H. longipetala*, although ten stamens are represented in the analysis of the flowers in De Candolle's tracing, quoted above. The ten stamens is probably a mistake; for only five are shown in the flowers on the plant drawn. In all other respects Andrieux's specimens agree with the plant traced. This species differs from *H. orizabensis* in its much slenderer scapes and smaller, more numerous flowers, and much smaller stipules.

2. **Heuchera minutiflora,** Hemsley, Diag. Pl. Nov. pars tertia, p. 50.

Scapis petiolisque patentim pilosis, foliis glabrescentibus cordato-orbicularibus obscure lobatis crenato-denticulatis, denticulis apiculatis, floribus minimis cymoso-subspicatis, scapo haud gracili paucifoliato, calyce latiuscule campanulato albo granuloso, petalis quam calycis lobi vix longioribus, staminibus stylisque inclusis vel brevissime exsertis.

Herba perennis, scaposus, 12–18-pollicaris. *Folia* petiolata; petiolus gracilis, 1½–3-pollicaris, patentim ferrugineo-pilosus; lamina membranacea, cordato-orbicularis, 1–2 poll. diametro, obscure lobata, crenato-denticulata, denticulis apiculatis, 7-nervis, utrinque cito glabrescens. *Flores* minimi (circiter lineam longi), cymoso-subspicati; scapus haud gracilis, sæpe 3–4-foliatus, infra pilosus, supra albo-granulosus; calyx albo-granulosus, latiuscule campanulatus, lobis oblongis, obtusis; petala linearia, lobis calycinis vix longiora; stamina inclusa (?demum brevissime exserta); ovarii parte superiore libera, glabra; stylis brevibus vix exsertis.

South Mexico, Popocatepetl (*H. Christy*). Hb. Kew.

3. **Heuchera orizabensis,** Hemsley, Diag. Pl. Nov. pars tertia, p. 50.

Ferrugineo-pilosa, pilis patentissimis, foliis cordato-orbicularibus obscure 5–7-lobatis 5–7-nerviis aristulato-dentatis, floribus mediocribus cymoso-paniculatis, scapo haud gracili, calyce glanduloso-hirsuto late campanulato, lobis latissimis rotundatis, petalis linearibus quam calycis lobi saltem duplo longioribus, staminibus exsertis.

Herba perennis, scaposa, 1–2-pedalis, petiolis præcipue ferrugineo-pilosis, pilis longis patentissimis. *Folia* longe (usque 6-poll.) petiolata; lamina membranacea, cordato-orbicularis, 1½–2 poll. diametro, obscure 5–7-lobata, 5–7-nervis, aristulato-dentata, supra cito glabrescens, subtus præcipue secus nervos pilosa, reticulato-venosa; stipulæ amplæ, petiolo adnatæ. *Flores* albo-rosei, ad 5 lineas longi, anguste cymoso-paniculati; scapus haud gracilis, infra medium nudus, paucibracteatus vel paucifoliatus, foliis vel bracteis inciso-dentatis; calyx glanduloso-hirsutus, late campanulatus, ad 3 lineas longus et latus, lobis erectis, latissimis, apice rotundatis; petala linearia, lobis calycinis saltem duplo longiora; stamina exserta; ovarii pars superior libera, glabra; styli elongati, divergentes.

South Mexico, peak of Orizaba, 11,000–12,000 feet (*Linden*, 577), 10,000–12,500 feet (*Galeotti*, 2835). Hb. Kew.

4. **Heuchera rubescens,** Torr. in Stansbury's Rep. p. 388, t. 5.

UTAH, CALIFORNIA, and NEW MEXICO.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 231). Hb. Kew.

5. **Heuchera sanguinea,** Englm. in Wisliz. Rep. p. 107.

NORTH MEXICO, Santa Cruz, Sonora (*Wislizenus*).

3. LEPUROPETALON.

Lepuropetalon, Ell. Sk. i. p. 370; Benth. et Hook. Gen. Plant. i. p. 639.

The only species.

1. **Lepuropetalon spathulatum,** Ell. Sk. i. p. 370.

SOUTH CAROLINA to GEORGIA, TEXAS, and—NORTH MEXICO, Santa Cruz, Sonora (*Parry*). —Also in CHILI, according to Torrey and Gray.

Tribe HYDRANGEÆ.

Trees and shrubs. With few exceptions, natives of the northern hemisphere.

4. HYDRANGEA.

Hydrangea, Linn. Gen. Plant. n. 557; Benth. et Hook. Gen. Plant. i. p. 640.

About thirty species, dispersed in the mountains of India, China, Japan, Java, and North and South America.

1. **Hydrangea peruviana,** Moric. in DC. Prodr. iv. p. 14.

Cornidia radiata, Œrst. in Vidensk. Meddel. 1856, p. 42.

NORTH MEXICO, Sierra Madre in barrancas, climbing and rooting on old trees like ivy (*Seemann*, 2142); SOUTH MEXICO, valley of Cordova (*Bourgeau*); COSTA RICA, Candelaria Mountains, 6000 to 7000 feet (*Œrsted*).—COLOMBIA to PERU. Hb. Kew.

5. PHILADELPHUS.

Philadelphus, Linn. Gen. Plant. n. 614; Benth. et Hook. Gen. Plant. i. p. 642.

About twelve species, inhabiting Central Europe, Temperate North America, Japan, and the Himalayan Mountains.

Seemann (Bot. Voy. 'Herald') refers all the forms enumerated below to one species.

1. **Philadelphus affinis,** Schl. in Linnæa, xiii. p. 419.

SOUTH MEXICO, Barranca de la Hacienda del Carmen (*Ehrenberg*).

2. **Philadelphus myrtoides,** Bertol. Fl. Guat. p. 21.

GUATEMALA, Volcan de Agua (*Velasquez*).

3. **Philadelphus mexicanus,** Schl. in Linnæa, xiii. p. 418; Rev. Hort. 1852, p. 381, t. 20.

North Mexico, Sierra Madre (*Seemann*, 2167); South Mexico, Chiapas (*Ghiesbreght*), San Nicolas (*Bourgeau*, 995), around Toluca (*Andrieux*, 373), Hacienda del Carmen (*Hartweg*, 458), Vera Cruz (*Linden*, 580), Zimapan (*Coulter*, 77 and 78), Chalco (*Andrieux*, 374); Guatemala, Dueñas (*Fraser*). Hb. Kew.

Doubtless some of the specimens here referred to *P. mexicanus* belong to one or another of the other species, if the different forms are distinguished as such.

4. **Philadelphus serpyllifolius,** A. Gray, Pl. Wright. i. p. 77.

Texas; New Mexico.—North Mexico, Sonora (*Smith*).

5. **Philadelphus zeyheri,** Schrad.? DC. Prodr. iii. p. 205.

South Mexico, Tampico to Real del Monte (*Berlandier*, 333). Hb. Paris.

The typical plant is a native of North America; but of what part it is not stated.

6. FENDLERA.

Fendlera, Engelm. et Gray in Pl. Wright. i. p. 77; Benth. et Hook. Gen. Plant. i. p. 643.

The only known species.

1. **Fendlera rupicola,** Engelm. et A. Gr. Pl. Wright. p. 77, t. 5.

Texas; New Mexico.—North Mexico, along the valley of the Rio Grande.

7. DEUTZIA.

Deutzia, Thunb. Nov. Gen. p. 19; Benth. et Hook. Gen. Plant. i. p. 642.

About eight shrubby species. With the exception of *D. mexicana*, natives of the Himalayan Mountains and China and Japan.

1. **Deutzia mexicana,** Hemsley, Diag. Pl. Nov. pars prima, p. 9. (Tab. XVIII.)

Foliis ovato-lanceolatis oblongisve obsolete denticulatis utrinque stellato-pubescentibus, supra scabridis subtus albidis, floribus parvis corymbosis, staminibus 12–15, filamentis deorsum dilatatis edentatis.

Frutex ramosus, compactus, ramis oppositis, teretibus, junioribus sparse stellatim pubescentibus. *Folia* petiolata, vix coriacea, ovato-lanceolata seu oblongo-lanceolata, 1½–2-pollicaria, obscure denticulata, acuta seu obtusa, utrinque breviter stellato-pubescentia, superne scabrida, atro-viridia, subtus albida, petiolo 3–4 lin. longo. *Flores* numerosi, corymbosi, corymbis ebracteatis; calyx stellato-albido-pubescens, lobis ovatis oblongisve, acutis vel fere rotundatis, persistentibus; petala ovati-oblonga; stamina 12–15, sæpissime 15, filamentis deorsum dilatatis edentatis; ovarium 3-loculare, multiovulatum; styli elongati, erecti, demum patentes, persistentes. *Fructus* maturus ignotus.

South Mexico, Orizaba (*Botteri*, 980). Hb. Kew.

This differs from the Asiatic species in having more than ten or twelve stamens, and

in the filaments being destitute of tooth-like appendages just below the anthers. In all other characters it is exactly a *Deutzia*.

EXPLANATION OF TAB. XVIII.

Branch in flower, natural size.

Fig. 1, partially expanded flower; 2, fully expanded flower; 3, young fruit: all enlarged.

Tribe ESCALLONIEÆ.

A considerable tribe of trees and shrubs, generally dispersed in both the northern and southern hemispheres, but most numerous in the latter, especially in South America.

8. PHYLLONOMA.

Phyllonoma, Willd. in Rœm. et Sch. Syst. Veg. vi. p. xx; Benth. et Hook. Gen. Plant. i. p. 648.

The following is the only species known:—

1. **Phyllonoma ruscifolia,** Willd. in Rœm. et Sch. Syst. Veg. vi. p. 210.

Dulongia acuminata, H. B. K. Nov. Gen. et Sp. vi. p. 78, t. 623.
Dulongia laticuspis et *Dulongia integerrima*, Turcz.

North Mexico, Sierra Madre (*Seemann*, 2163); South Mexico, Oaxaca, woods at 6000 feet (*Galeotti*, 7197; *Liebmann*), Orizaba (*Müller*), Mexico (*Sumichrast*), forests of Perote (*Hahn*).—Colombia. Hb. Kew.

Tribe CUNONIEÆ.

Also a large tribe, and the species nearly all southern, several genera being peculiar to Australia.

9. WEINMANNIA.

Weinmannia, Linn. Gen. Plant. n. 493; Benth. et Hook. Gen. Plant. i. p. 653; Engler in Linnæa, xxxvi. p. 592.

This is the largest and most widely dispersed genus of the tribe, comprising fifty or sixty species, inhabiting the Malayan peninsula and islands, the Mascarene and Pacific islands, Australia and New Zealand, and Temperate and Tropical South America.

1. **Weinmannia glabra,** Linn. fil. Sp. Pl. Suppl. p. 228; Engler in Linnæa, xxxvi. p. 613.

Weinmannia pinnata, Linn. pro parte.

South Mexico, Talea, Oaxaca (*Liebmann*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 569, 525), without locality (*Sallé*).—West Indies, Guiana, Venezuela, and Colombia. Hb. Kew.

2. **Weinmannia intermedia,** Ch. et Schl. in Linnæa, v. p. 555, et xxxvi. p. 616.

South Mexico, Cuesta Grande, between Jalacingo and Huitamalco (*Schiede & Deppe*), Tuspango, valley of Cordova (*Bourgeau*), between Huitamalco and Tiuzutlan, Puebla (*Liebmann*); Costa Rica, Volcan de Barba (*Hoffmann*). Hb. Kew.

Tribe RIBESIEÆ.

Limited to the following genus :—

10. RIBES.

Ribes, Linn. Gen. Plant. n. 281; Benth. et Hook. Gen. Plant. i. p. 654.

Between fifty and sixty species, dispersed in Temperate Europe, Asia, and North America, and in the Andes of South America. The American species are most numerous and diversified.

1. **Ribes affine,** H. B. K. Nov. Gen. et Sp. vi. p. 60.

Ribes campanulatum, Willd.

North Mexico, Zacatecas (*Hartweg*, 7); South Mexico, Moran (*Humboldt & Bonpland*), Mineral del Monte (*Ehrenberg*). Hb. Kew.

2. **Ribes aureum,** Pursh, Fl. N. Am. i. p. 164.

Ribes fragrans, Lodd. Bot. Cab. t. 1533.

Ribes tenuiflorum, Lindl. Bot. Reg. t. 1274.

Texas; Oregon; California.—North Mexico, Chihuahua and Sonora (*Parry*), Cimieluque springs (*Wright*). Hb. Kew.

3. **Ribes jorullense,** H. B. K. Nov. Gen. et Sp. vi. p. 61.

Ribes ciliatum, Willd.

Ribes odoratum, Schl.

South Mexico, Zimapan and Real del Monte (*Coulter*, 16), Popocatepetl, peak of Toluca and peak of Orizaba, at 10,000 to 12,000 feet (*Galeotti*, 3691), Toluca (*Andrieux*, 357), Jorullo (*Humboldt & Bonpland*). Hb. Kew.

4. **Ribes microphyllum,** H. B. K. Nov. Gen. et Sp. vi. p. 62.

South Mexico, near El Guarda, between Guchilaque and Mexico, at 8400 feet (*Humboldt & Bonpland*).

5. **Ribes multiflorum,** H. B. K. Nov. Gen. et Sp. vi. p. 60.

Ribes kunthii, Berland.

South Mexico, Moran (*Humboldt & Bonpland*), in forests near Guajimalpa (*Schaffner*). Hb. Kew.

6. **Ribes,** sp.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 232), San Luis Potosi to Tampico (*Palmer*, 1063), Santa Fé, valley of Mexico (*Bourgeau*, 302). Hb. Kew.

Order XLIX. CRASSULACEÆ.

Crassulaceæ, Benth. et Hook. Gen. Plant. i. p. 656.

Herbs or shrubs, often succulent. About 400 species, referred to fourteen genera. They are most abundant in the temperate and subtropical parts of Europe, Western Asia, South Africa, and in America, rare in the arctic regions and in Australia, and not represented in Polynesia.

1. TILLÆA.

Tillæa, Linn. Gen. Plant n. 177; Benth. et Hook. Gen. Plant. i. p. 657.

Small herbs. About twenty species, almost cosmopolitan in their distribution.

1. **Tillæa angustifolia**, Nutt. in Torr. & Gray, Fl. N. Am. i. p. 558.

OREGON southward.—NORTH MEXICO, San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 680; *Schaffner*). Hb. Kew.

2. BRYOPHYLLUM.

Bryophyllum, Salisb. Parad. Lond. t. 3; Benth. et Hook. Gen. Plant. i. p. 658.

A genus of four species, two of which inhabit Madagascar, one South Africa, and the following:—

1. **Bryophyllum calycinum**, Salisb. Parad. Lond. t. 3; Bot. Mag. t. 1409.

Widely dispersed in the Tropical and Subtropical Regions of both hemispheres, and extending to—SOUTH MEXICO, Orizaba (*Botteri*, 933), Mineral del Monte, Omitlan, and Cuesta Blanca (*Ehrenberg*). Hb. Kew.

3. COTYLEDON.

Cotyledon, Linn. Gen. Plant. n. 578; Benth. et Hook. Gen. Plant. i. p. 659.

About sixty herbaceous and shrubby species, usually having fleshy leaves. They inhabit Southern and Western Europe, the whole of Africa, the Himalayan Mountains, Eastern Asia, Mexico, and California; and one species is a native of Peru. The subgenus *Echeveria* is peculiar to America, having its centre in Mexico.

1. **Cotyledon acutifolia**, Baker in Ref. Bot. i. sub tab. 71. n. 34.

Echeveria acutifolia, Lindl. Bot. Reg. xxviii. t. 29.

SOUTH MEXICO, Oaxaca (*Hartweg*); GUATEMALA, Dueñas, 5000 feet (*Salvin & Godman*). Hb. Kew.

2. **Cotyledon adunca**, Baker in Ref. Bot. t. 60.

MEXICO.

3. **Cotyledon agavoides**, Baker in Ref. Bot. t. 67.

Echeveria agavoides, Lemaire, Ill. Hort. x. Suppl. p. 78.

MEXICO.

4. **Cotyledon (Echeveria) albiflora,** Hemsley, Diag. Pl. Nov. pars 1, p. 9.

Herbacea, glaberrima, foliis caulinis parvis ovato-oblongis crassis obtusis, floribus parvis (albis, *Galeotti*) sessilibus vel breviter pedicellatis spicato-paniculatis.

Herba perennis, glaberrima, ramis vix carnosis. *Folia* caulina sparsa, alterna, carnosa, ovato-oblonga, obtusa, vix semipollicaria. *Flores* (albi, *Galeotti*) parvi, sessiles vel breviter pedicellati, spicato-paniculati; sepala fere libera et æqualia, carnosa, late ovata, obtusa, 1–1½ lin. longa; corollæ lobi fere ad medium coaliti, carnosi, erecti, carinati, acuti, 2½–3 lin. longi; stamina tubo inserta, lobis breviora; squamulæ quadratæ. *Carpella* 5, stylis brevibus coronata.

South Mexico, rocks at 7000 feet in the Cordillera of Oaxaca (*Galeotti*, 2810). Hb. Kew.

The specimens of this species are very imperfect; but the inflorescence and white flowers distinguish it from all others.

5. **Cotyledon atropurpurea,** Baker in Ref. Bot. t. 198.

Mexico?

6. **Cotyledon batesii,** Hemsley, Diag. Pl. Nov. pars 1, p. 9. (Tab. XIX.)

Suffruticosa, glaberrima, ramosa, ramis lignosis, foliis sparsis vel confertis carnosis lineari-oblongis acutis obtusisve (planis?), floribus parvis numerosis in cymas densas terminales plurifurcatas dispositis.

Suffrutex habitu *Sedi* cujusdam, glaberrimus, vix carnosus, ramosus, ramis tenuibus, teretibus, lignosis, 6–12-pollicaribus. *Folia* sparsa vel interdum rosulata, carnosa (plana?), lineari-oblonga (subteretia?), 4–6 lin. longa, ovata et multo breviora, obtusa vel acuta, basi soluta. *Flores* parvi, vix 3 lineas alti et diametro, numerosi, in cymas densas plurifurcatas terminales dispositi; calycis lobi carnosi, inæquales, fere liberi, lineari-oblongi, obtusi, basi gibbosi; corolla vix carnosa, tubulosa, calyce paulo longior, lobis late ovatis, acutis, erectis, leviter carinatis, quam tubus brevioribus; stamina 10, fauci tubi inserta, inclusa, filamentis basi dilatatis; squamulæ parvæ, subquadratæ. *Carpella* 5, angusta, stylis elongatis subulatis coronata.

South Mexico, without localities (*Bates, Schiede & Deppe*), Zacoalco, near Mexico (*Bourgeau*, 561), Santa Fé (1178 bis, *Bourgeau*). Hb. Kew.

This species is remarkably like a *Sedum* of the *S. reflexum* type in habit, but it has altogether the floral characters of *Cotyledon*.

EXPLANATION OF TAB. XIX.

Plant, nat. size.

Fig. 1, a leaf; 2, a flower; 3, the same laid open.

7. **Cotyledon bifida,** Hemsl.

Echeveria bifida, Schl. in Linnæa, v. p. 411.

South Mexico, in a barranca near Regla (*Schiede*).

8. **Cotyledon coccinea,** Cav. Ic. ii. p. 54, t. 170; Bot. Mag. t. 2572.

Mexico.

9. **Cotyledon corderoyi,** Baker in Gard. Chron. 1874, p. 599.

MEXICO ?

10. **Cotyledon cæspitosa,** Haw. Misc. p. 180; Ref. Bot. t. 69.

Cotyledon linguiformis, Ait.
Cotyledon reflexa, Willd.
Echeveria cæspitosa, DC.
Sedum cotyledon, Jacq. Ecl. i. t. 17.
Echeveria campanulata, Kze. Delect. Sem. Hort. Lips. 1842.

CALIFORNIA.—MEXICO.

11. **Cotyledon canaliculata,** Baker in Ref. Bot. i. sub tab. 58. n. 9.

Echeveria canaliculata, Hook. Bot. Mag. t. 4986.

SOUTH MEXICO, Real del Monte (*Staines*).

12. **Cotyledon carnicolor,** Baker in Ref. Bot. iii. t. 199.

MEXICO ?

13. **Cotyledon cymosa,** Baker in Ref. Bot. t. 68.

Echeveria cymosa, Lemaire, Ill. Hort. x. Suppl. p. 79.

MEXICO.

14. **Cotyledon desmetiana,** Morren, Belg. Hort. xxiv. p. 159.

MEXICO.

15. **Cotyledon farinulenta,** Lem. Ill. Hort. 1864, sub tab. 392.

MEXICO.

16. **Cotyledon fulgens,** Baker in Ref. Bot. t. 64.

Echeveria fulgens, Lem. Jard.-Fleur. t. 244.

MEXICO.

17. **Cotyledon (§ Umbilicus) galeottiana,** Hemsley, Diag. Pl. Nov. pars 1, p. 9.

Herbacea, glabrescens, ramosa, ramis gracilibus lignosis, foliis (radicalibus ignotis) vix carnosis glabris alternis spathulatis petiolatis, floribus albis pedicellatis in cymas unilaterales dispositis, sepalis basi gibbosis, corolla infra medium 5-partita.

Herba (annua?) glabrescens, ramosa, 4–6-pollicaria (probabiliter interdum ultra), ramis tenuibus teretibus, lignosis, glaucis. *Folia* (radicalia ignota) caulina alterna, vix carnosa, glabra, ovato-lanceolata, obtusa, deorsum attenuata, 6–9 lineas longa. *Flores* albi, pedicellati, circiter 5–6 lin. diametro, in cymas unilaterales dispositi; pedicelli sparse puberuli, 3–6 lin. longi; calycis lobi subcarnosi, linearo-oblongi, obtusi, petalis paulo breviores, basi gibbosi; corollæ lobi vix ad medium cohærentes, lanceolati, acuti; stamina 10, tubo inserta, alterna, breviora, filamentis filiformibus vel basi parum dilatatis; squamulæ fere sesquilineæ. *Carpella* 5, oblonga, polysperma, stylis brevibus subulatis coronata; semina oblonga.

SOUTH MEXICO, rocks at 5000 to 6000 feet in the Cordillera of Oaxaca (*Galeotti,* 2812). Hb. Kew.

A distinct species, readily distinguished from all described Mexican congeners by its white cymose flowers.

18. **Cotyledon glauca,** Baker in Ref. Bot. t. 61.

South Mexico, mill of Belen (*Bourgeau*, 48). Hb. Kew.

19. **Cotyledon gibbiflora,** Moç. et Sessé in DC. Prodr. iii. p. 401; Bot. Reg. t. 1247.

Echeveria grandiflora, Haw.

South Mexico, Pedregal, near Mexico (*Bourgeau*, 1378), region of Orizaba (*Bourgeau*, 3).

Var. **metallica,** Baker in Ref. Bot. t. 65.

Mexico. Hb. Kew.

20. **Cotyledon grayii,** Baker in Ref. Bot. i. sub tab. 71. n. 33.

Echeveria paniculata, Gray, Pl. Wright. i. p. 76, in adnot.

North Mexico, Cosiquiriachi (*Wislizenus*).

21. **Cotyledon jurgensenii,** Hemsley, Diag. Pl. Nov. pars 1, p. 9.

Suffruticosa, erecta, humilis, hispidula, ramis tenuibus teretibus lignosis foliosis, foliis parvis ovato-oblongis obtusis basi solutis subamplexicaulibus, floribus rubescentibus sessilibus cymosis, cymis 2–3-floris.

Suffrutex semipedalis, parce ramosus, ramis tenuibus, teretibus, lignosis, per totam longitudinem foliosis. *Folia* alterna, hispidula, subcarnosa, ovato-oblonga, obtusa, $1\frac{1}{2}$–2 lin. longa, basi soluta, subamplexicaulia. *Flores* rubescentes, sessiles, 3–4 lineas diametro, in cymas terminales et laterales paucifloras dispositi; calyx hispidulus, lobis lineari-lanceolatis, obtusis, fere liberis; corollæ lobi breviter coaliti, lanceolati, carinati, apiculati, vix carnosi, calycis longitudine dupla; filamenta deorsum dilatata; squamulæ parvæ, truncatæ. *Carpella* 5, polysperma, stylis elongatis subulatis coronata.

South Mexico, without locality (*Jurgensen*, 616, in part). Hb. Kew.

This and *C. mexicana* were distributed under the same number; and they closely resemble each other, both having the habit of a small *Sedum*.

22. **Cotyledon linguæfolia,** Baker in Ref. Bot. t. 58.

Echeveria linguæfolia, Lemaire, Ill. Hort. x. suppl. p. 81.

Mexico.

23. **Cotyledon lurida,** Baker in Ref. Bot. t. 59.

Echeveria lurida, Lindl. Bot. Reg. xxvii. t. 1.

Echeveria racemosa, Ch. et Schl. Bot. Mag. t. 3570.

Echeveria lurida, Haw. in Phil. Mag. 1831, p. 416?

South Mexico, on walls, Jalapa (*Schiede & Deppe*).

24. **Cotyledon mexicana,** Hemsley.

Herbacea, pumila, glabra, ramis tenuibus lignosis, foliis parvis subcarnosis lineari-spathulatis lanceolatisve obtusis, floribus rubescentibus (?), sepalis linearibus obtusis subcarnosis, petalis alte cohærentibus quam sepala parum longioribus, staminibus 10 fauci tubi insertis.

Herba glabra, 3–4-poll., erecta, ramis tenuibus lignosis. *Folia* sparsa vel ramorum sterilium conferta, alterna, subcarnosa, lineari-spathulata vel lanceolata, obtusa, 3–4 lin. longa. *Flores* pauci, cymosi, breviter pedicellati; sepala fere libera, linearia, obtusa; petala plana, dimidia

arcte cohærentia, corollam tubulosam formantia, 3–4 lineas longa, lobis ovatis, acutis, fere erectis; stamina 10, fauci tubi inserta, inclusa, alternis brevioribus; squamulæ parvæ, subcarnosæ, truncatæ, retusæ. *Carpella* 5, polysperma.—*Umbilicus mexicanus*, Schl. in Linnæa, xiii. p. 409.

South Mexico, without locality (*Jurgensen*, 616, in part), Mineral del Monte *Ehrenberg*). Hb. Kew.

25. **Cotyledon mucronata,** Baker in Ref. Bot. sub t. 55. n. 4.

Echeveria mucronata, Schl. in Linnæa, xii, p. 411, et Hort. Hal. p. 19, t. 10.

South Mexico, Mineral del Monte, Omitlan, and Cuesta Blanca (*Ehrenberg*).

26. **Cotyledon nevadensis,** Watson, Fl. Calif. i. p. 212.

California.—North Mexico, Sonora.

27. **Cotyledon nodulosa,** Baker in Ref. Bot. t. 56.

Mexico.

28. **Cotyledon nuda,** Baker in Ref. Bot. t. 57.

Mexico.

29. **Cotyledon pachyphytum,** Baker in Ref. Bot. i. sub t. 59. n. 12.

Pachyphytum bracteosum, Kl. Bot. Mag. t. 4951.

Mexico.

30. **Cotyledon (Echeveria) parviflora,** Hemsley, Diag. Pl. Nov. pars 1, p. 9.

Herbacea (annua?), glabra, caule erecto simplici, foliis radicalibus ignotis, caulinis sessilibus carnosis lineari-oblongis acutis adscendentibus basi solutis deorsum productis, floribus parvis sessilibus in cymas parvas spicatim dispositis vel spicatis.

Herba (annua?) stricta, erecta, glaberrima, caule simplici gracili, 4–10-pollicari. *Folia* radicalia ignota; caulina sessilia, carnosa, adscendentia, lineari-lanceolata, 4–8 lin. longa, acuta, basi soluta, deorsum producta. *Flores* numerosi, 2–3 lin. longi, sessiles, purpureo-maculati, in cymas 2–3-floras spicatim dispositi vel spicati, bracteis foliis simillimis; calycis lobi inæquales, foliis simillimi, petalis fere æquilongi, ovato-oblongi, obtusi; corollæ lobi vix carnosi, fere ad medium cohærenti, ovati, acuti, apice patenti, dorso carinati; stamina 10, tubo inserta, inclusa; squamulæ parvæ, truncatæ. *Carpella* 5, polysperma, cornuta; semina minuta, oblonga.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 238); South Mexico, Mount Zacoalco, near Guadalupe, valley of Mexico (*Bourgeau*, 729), Real del Monte (*Coulter*, 39), Guadalupe (*Bilimek*, 172). Hb. Kew.

This differs from all previously described species of this section in its small flowers, small leaves, and slender stem. The petals spread at the tips, and are apparently traversed longitudinally by numerous very thin reddish lines on a lighter ground.

31. **Cotyledon pubescens,** Baker in Ref. Bot. i. sub t. 56, et iii. t. 197.

Echeveria pubescens, Schl. in Linnæa, xiii. p. 411, et Hort. Hal. p. 19, t. 9.

South Mexico, valley of Mexico (*Bourgeau*, 730). Hb. Kew.

32. **Cotyledon pumila,** Baker in Ref. Bot. t. 62.

Echeveria pumila, Schl. Hort. Hal. p. 20.

Mexico.

33. **Cotyledon roseata,** Baker in Ref. Bot. sub t. 55. n. 3.

Echeveria rosea, Lindl. Bot. Reg. xxviii. t. 22.
Courantia echeverioides, Lemaire.

MEXICO.

34. **Cotyledon retusa,** Baker in Ref. Bot. sub t. 64. n. 22.

Echeveria retusa, Lindl. Bot. Reg. xxxiii. t. 57.

MEXICO.

35. **Cotyledon scheerii,** Baker in Ref. Bot. sub t. 62. n. 19.

Echeveria scheerii, Lindl. Bot. Reg. xxxi. t. 27.

NORTH MEXICO, Chihuahua (*Potts*).

36. **Cotyledon secunda,** Baker in Ref. Bot. sub t. 60. n. 14.

Echeveria secunda, Lindl. Bot. Reg. xxvi. t. 57.
Echeveria rosacea, Lind. et André, Ill. Hort. 1873, p. 64, t. 124?

MEXICO.

37. **Cotyledon stolonifera,** Baker in Ref. Bot. t. 63.

MEXICO.

38. **Cotyledon strictiflora,** Baker in Ref. Bot. sub t. 62. n. 17.

Echeveria strictiflora, A. Gray.

MEXICO.

39. **Cotyledon subulifolia,** Baker in Ref. Bot. sub t. 71. n. 32.

Echeveria teretifolia, DC. Prodr. iii. p. 401; DC. Crass. t. 6.

MEXICO.

4. SEDUM.

Sedum, Linn. Gen. Plant. n. 579; Benth. et Hook. Gen. Plant. i. p. 659.

About 120 species, chiefly herbaceous, spread over the temperate and cold regions of the northern hemisphere; and one or two species occur in the Andes of South America. Few of the Mexican species were described, and some of them only impefectly; we have therefore described the new species and redescribed the old ones.

1. **Sedum batesii,** Hemsley, Diag. Pl. Nov. pars 1, p. 12.

Annuum, pumilum, gracillimum, glabrum, simplicicaule vel ramosum, foliis carnosis parvis remotis lineari-spathulatis, floribus albis numerosis cymosis fere sessilibus vel singulis et longe pedicellatis, calycis lobis crassis basi longe productis.

Herba annua, erecta, glaberrima, gracillima, 2–3-pollicaris. *Radix* crassa. *Caulis* simplex vel ramosus, teres. *Folia* carnosa, distantia, lineari-spathulata, 3–5 lin. longa. *Flores* albi, numerosi, pedicellati, cymosi, 3–4 lin. diametro; sepala carnosa, oblongo-lanceolata, obtusa, basi longe producta; petala lanceolata, acuta, sepalis duplo longiora; stamina 10, petalis æquilonga; filamentis basi tantum dilatatis; squamulæ lineari-cuneatæ, apice rotundatæ vix semilineam longæ, rubræ. *Carpella* 5, ovata, stylis elongatis subulatis coronata; semina parva, linearia.

MEXICO, without locality (*Bates*). Hb. Kew.

2. **Sedum bourgæi,** Hemsley, Diag. Pl. Nov. pars 1, p. 11. (Tab. XX.)

Suffrutescens, glaberrimum, ramosum, ramis lignosis, foliis sparsis carnosis teretibus, floribus (luteis?) breviter pedicellatis in cymas laxas plurifurcatas dispositis, calycis lobis carnosis obtusis, petalis obtusiusculis.

Suffrutex procumbens, ramosus, glaberrimus, ramis teretibus, basi lignosis, floriferis adscendentibus, 6–9-pollicaribus. *Folia* sparsa, alterna, carnosa, teretia, obtusa, granuloso-punctata (an semper?), 4–6 lin. longa, basi soluta. *Flores* (lutei?) breviter pedicellati, 5–6 lin. diametro, in cymas laxas bracteatas plurifurcatas dispositi, bracteis foliis simillimis sed minoribus; calycis lobi inæquales, carnosi, lineari-oblongi, obtusi, basi gibbosi; petala lanceolata, obtusiuscula; stamina 10, petalis breviora; squamulæ lineares, ½ lin. longæ. *Carpella* 5, stylis elongatis subulatis coronata.

South Mexico, San Nicolas (*Bourgeau*, 933). Hb. Kew.

EXPLANATION OF TAB. XX.

Portion of a plant, nat. size.

Fig. 1, a leaf; 2, a flower; 3, the same with petals and stamens removed.

3. **Sedum botterii,** Hemsley, Diag. Pl. Nov. pars 1, p. 10.

Fruticosum, glabrum, ramosum, ramis carnosis valde foliosis, foliis subcarnosis alternis obovato-spathulatis ellipticis vel fere rotundatis basi cuneatis, floribus (luteis?) laxe cymoso-paniculatis pedicellatis, sepalis quam petala dimidio brevioribus, squamulis latis.

Frutex glaber, ramosus, ramis crasso-carnosis, junioribus valde foliosis. *Folia* subcarnosa, alterna, spathulata, obovata, elliptica vel fere rotundata, usque sesquipollicaria, apice semper rotundata, basi cuneata, venis (in siccis) manifestis. *Flores* breviter pedicellati, laxe cymoso-paniculati, 5–6 lineas diametro, ramulis panicularum elongatis, gracilibus; calycis lobi plani (?), lineari-oblongi, obtusi; petala (lutea?) anguste lanceolata, acuta, sepalis duplo longiora; filamenta filiformia, petalis breviora; squamulæ magnæ, subquadratæ vel fere orbiculares, basi attenuatæ. *Carpella* 5, lata; semina parva, oblonga.

South Mexico, Orizaba (*Botteri*, 466, 957), valley of Cordova (*Bourgeau*, 2061).

The loose paniculate inflorescence with slender branches, the narrow acute petals, and the relatively large hypogynous scales distinguish this species.

4. **Sedum confusum,** Hemsley, Diag. Pl. Nov. pars 1, p. 10.

Fruticosum, glaberrimum, nitidum, ramis teretibus vix incrassatis, foliis crassis sparsis vel in ramulis sterilibus rosulatis obovato-spathulatis, floribus sessilibus cymosis 4–5 lin. diametro, cymis congestis, calycis lobis parvis incrassatis, filamentis filiformibus, squamulis minutis rotundatis.

Frutex glaberrimus, nitidus, ramosus, 1–2-pedalis, ramis teretibus vix incrassatis. *Folia* sessilia, crassa, obovato-spathulata, 9–12 lin. longa, apice rotundata, basi soluta, infra vix canaliculata. *Flores* flavi, sessiles, in cymas parvas congestas disposita, 4–5 lin. diametro; calycis lobi parvi, oblongi, obtusi, incrassati, ad ½ lin. longi; petala ovato-lanceolata; filamenta filiformia, petalis breviora; squamulæ minutæ, rotundatæ.

Mexico?

Described from garden specimens named *S. spathulifolium*, from which it is very distinct, belonging to the same shrubby group as *S. dendroideum*.

5. **Sedum cupressoides,** Hemsley, Diag. Pl. Nov. pars 1, p. 11. (Tab. XXI.)

Suffrutescens, procumbens, humile, ramosum, ramis gracilibus, foliis incrassatis parvis ovato-teretibus dense appresso-imbricatis, floribus solitariis vel paucis aggregatis.

Suffrutex glaberrimus, ramosus, procumbens, 4–6-pollicaris, ramis gracilibus, dense foliosis. *Folia* incrassata, parva, sessilia, imbricata, ovato-teretia, obtusa, vix lineam longa, basi soluta et late expanso-gibbosa. *Flores* rosei, sessiles, ad 3 lineas diametro, in cymas parvas laterales dispositi, vel sæpius solitarii et terminales; calycis lobi subcarnosi, breves, ovato-oblongi; petala rosea (*Galeotti*), lanceolata, acuta, calycis lobis quadruplo longiora; filamenta filiformia, petalis breviora; squamulæ parvæ, truncatæ vel retusæ. *Carpella* angusta, stylis elongatis subulatis coronata.

South Mexico, rocks at 7000 feet in the Cordillera of Oaxaca (*Galeotti*, 2811), without exact locality (*Jurgensen*, 672). Hb. Kew.

A curious plant, reminding one of the South-African *Crassula lycopodioides*; but it is of more slender habit.

EXPLANATION OF TAB. XXI.

The plants, natural size.

Fig. 1, leaves in different positions; 2, portion of branch bearing a solitary terminal flower; 3, a fully expanded flower; 4, a flower from the specimen with lateral inflorescence; 5, gynæcium: all enlarged.

6. **Sedum dendroideum,** Moç. et Sessé (char. emend.).

Fruticosum, erectum, ramosum, glabrum, ramis crassis carnosis, foliis carnosis obovato-spathulatis vel fere rotundatis sessilibus basi solutis deorsum leviter productis, floribus cymoso-paniculatis sessilibus, calycis lobis late ovatis obtusis triplo quam petala brevioribus, petalis late lanceolatis acutis, squamulis parvis truncatis vix emarginatis.

Frutex erectus, ramosus, glaberrimus, ramis crasso-carnosis, versus apices tantum foliosis. *Folia* sessilia, carnosa, obovato-spathulata vel fere rotundata, basi soluta, deorsum leviter producta, ½–1½ poll. longa, sparsa vel in ramis sterilibus rosulata. *Flores* pentameri, flavi, 5–6 lin. diametro vel ultra, sessiles, bracteati, secundi, cymoso-paniculati, paniculis amplis, densis; calycis lobi late ovati, obtusi, breves; petala late lanceolata, acuta, ad 3 lin. longa; filamenta basi dilatata; squamulæ parvæ, truncatæ, leviter retusæ. *Carpella* polysperma, stylis subulatis coronata.—*Moç. et Sessé in DC. Mém. Crass.* p. 37, t. 9.

South Mexico, Barranca, valley of Mexico (*Bourgeau*, 1421). Hb. Kew.

De Candolle's description of this species was made from a drawing, and is consequently incomplete. Bourgeau's specimens correspond so well with the figure quoted above, that they may be regarded as typical, in conjunction with this fuller description.

7. **Sedum ebracteatum,** Moç. et Sessé (char. emend.).

Herbaceum, ramis sterilibus brevissimis foliis dense rosulatis, ramis floriferis erectis foliis distantibus, foliis carnosis albo-puberulis oblongis obtusiusculis, cymis patentibus, floribus sessilibus bracteatis, calycis lobis lanceolatis subcrassis glandulosis, petalis albo-flavescentibus duplo longioribus quam lobi calycis.

Herba: rami steriles brevissimi, foliis dense rosulatis; floriferi erecti, pedales, foliis distantibus. *Folia* carnosa, albido-pubescentia, ovali-oblonga, 9–15 lineas longa, basi lata, ramorum floriferorum subamplexicaulia, omnia obtusiuscula. *Flores* pentameri, albo-flavescentes,

6–7 lin. diametro, sessiles, in cymas elongatas bracteatas dispositi; calycis lobi glandulosi, lanceolati, obtusi; petala ovato-lanceolata, acuta; filamenta filiformia; squamulæ parvæ, oblongæ.—*DC. Mém. Crass.* p. 37, t. 6. fig. B; *Baker in Refug. Bot.* iv. t. 221: male descriptum.

MEXICO (*Moçino*). Cultivated specimens in Hb. Kew.

De Candolle described this species from a drawing. Subsequently a cultivated plant was identified with the figure by the late A. A. Black, which, with this amended description, may now be regarded as typical.

8. **Sedum fuscum.**

Annuum, pumilum, erectum, ramosum, glabrum, ramis gracilibus, foliis superioribus carnosis oblongis compressis ramis arcte appressis, cymis elongatis multifloris, sepalis carnosis oblongis basi longe productis, petalis albis, carpellis demum divergentibus, seminibus numerosis oblongis fuscis punctulatis.

Herba annua, erecta, glabra, ramosa, 3–4-pollicaris, ramis gracilibus, exsiccatis fere aphyllis, inferioribus alternis, superioribus oppositis. *Folia* (pauca superiora tantum visa) carnosa, late oblonga, 2–3 lineas longa, compressa, utrinque rotundata, basi soluta, deorsum longiuscule producta, ramis arcte appressa. *Flores* cymosi, breviter pedicellati, circiter 5 lineas diametro, cymis multifloris elongatis; sepala carnosa, foliis simillima sed breviora, oblonga, basi longe producta, flavescentia, sæpe roseo vel purpureo picta; petala alba, ecarinata; filamenta filiformia; squamulæ obsoletæ. *Carpella* 5, polysperma, subinflata, demum divergentia, purpurascentia; semina oblonga, fusca, punctulata.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 235). Hb. Kew.

This species closely resembles *S. sparsiflorum*, Nutt., to which we at first referred it; but it differs in its white petals, much less divergent carpels, and in its dark, distinctly pitted seeds. The habit, too, is somewhat different.

9. **Sedum greggii,** Hemsley, Diag. Pl. Nov. pars 1, p. 12.

Herbaceum, perenne, pumilum, glabrum, foliis parvis carnosis confertis ellipticis vel obovato-oblongis minute crenulatis, floribus luteis sessilibus in cymas simplices terminales 3–5 (vel plures?) aggregatis, sepalis oblongis ellipticisve obtusis rotundatisve, petalis ovato-lanceolatis acutis carinatis.

Herba perennis, glabra, ramis floriferis erectis, 3–6-pollicaribus, cito exfoliatis. *Folia* carnosa, conferta, obovato-oblonga vel elliptica, 2–3 lin. longa, minute serrulata. *Flores* lutei, sessiles, in cymas simplices terminales 3–5 aggregati, ad 5 lin. diametro; sepala vix carnosa, oblonga vel elliptica, obtusa vel rotundata; petala ovato-lanceolata, carinata, acuta, sepalis duplo longiora; filamenta filiformia; squamulæ parvæ, lineari-oblongæ. *Carpella* 5, ovata, stylis elongatis subulatis coronata.

MEXICO, without locality (*Gregg*, 635), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 236). Hb. Kew.

10. **Sedum guatemalense,** Hemsley, Diag. Pl. Nov. pars 1, p. 11.

Suffruticosum, glabrum, diffusum, procumbens, ramis teretibus lignosis, floriferis erectis, foliis sparsis alternis subcarnosis teretibus vel lineari-oblongis obtusis, floribus pedicellatis in cymas terminales laxas dispositis, sepalis carnosis linearibus obtusis, petalis ovato-lanceolatis mucronulatis, squamulis carnosis clavatis.

Suffrutex glaberrimus, diffusus, procumbens, ramis tenuibus, teretibus, lignosis, floriferis erectis 9–12-pollicaribus. *Folia* sparsa, alterna, subcarnosa, lineari-oblonga, obtusa, 4–5 lin. longa, vix 1 lin. lata. *Flores* (rubescentes?) pedicellati, in cymas laxas terminales dispositi, ad 6 lineas diametro, pedicellis ad 3 lin. longis; sepala carnosa, linearia, obtusa, petalis fere æqualia; petala ovato-lanceolata, mucronulata; stamina 10, filamentis filiformibus, brevioribus quam petala; squamulæ carnosæ, clavatæ, ultra 1 lin. longæ. *Carpella* 5, polysperma; semina linearia, utrinque appendiculata.

GUATEMALA, summit above Calderas, at 8000 feet, growing on dead stumps (*Salvin & Godman*, 78). Hb. Kew.

11. **Sedum incertum,** Hemsley, Diag. Pl. Nov. pars 1, p. 11.

Herbaceum, glabrum, erectum, regulariter ramosum, ramis alternis incrassatis adscendentibus, foliis carnosis sparsis late ovatis vel fere rotundatis obtusis basi latis, floribus sessilibus in cymas breves congestis, calycis lobis ovatis obtusis, squamulis parvis late rotundatis, stylis elongatis gracilibus.

Herba glabra, robusta, pedalis (vel ultra?) regulariter ramosa; ramis alternis, incrassatis, adscendentibus. *Folia* carnosa, sparsa, late ovata vel fere rotundata, 6–12 lineas longa, sursum gradatim minora obtusa, basi lata: *Flores* sessiles, in cymas laterales breves congesti; calycis lobi ovati, obtusi; petala late lanceolata, lobis duplo longiora, acuta. *Carpella* polysperma, stylis elongatis subulatis coronata.

SOUTH MEXICO, valley of Mexico (*Bourgeau*, 1181). Hb. Kew.

A very distinct species in its regular branching and crowded flowers. The specimens, however, are insufficient for a complete description, and, having apparently been scalded, the flowers were difficult to dissect.

12. **Sedum,** sp.

SOUTH MEXICO, Cuernavaca (*Bourgeau*, 1182), Vera Cruz to Orizaba (*F. Müller*, 322). Hb. Kew.

These specimens are so imperfect that it is impossible to describe them satisfactorily, though they seem to belong to a very distinct species closely allied to the last, but more slender in habit, and having differently shaped leaves.

13. **Sedum liebmannianum,** Hemsley, Diag. Pl. Nov. pars 1, p. 12.

Herbaceum, annuum (?), nanum, glabrum, parce ramosum, ramis subcarnosis, foliis parvis carnosis approximatis imbricatisve ovato-oblongis vel ellipticis obtusis basi solutis expansis, floribus paucis parvis ad apices ramulorum breviter pedicellatis, sepalis brevibus subcarnosis dorso carinatis, petalis lineari-lanceolatis mucronulatis, squamulis minutis.

Herba annua (?), glabra, ramosa, 2–3-pollicaris, ramis subcarnosis. *Folia* carnosa, approximata seu imbricata, ovato-oblonga vel elliptica, obtusa vel rotundata, 1–2 lin. longa, basi soluta expansa. *Flores* roseo-albi, pauci, breviter pedicellati, bracteati, ad 4 lineas diametro; sepala brevia, subcarnosa, oblonga, obtusa, dorso carinata; petala lineari-lanceolata, mucronulata, dorso carinata, sepalis triplo longiora; filamenta filiformia; squamulæ minutæ; styli subulati.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 237) SOUTH MEXICO, Yavesia, Oaxaca, 7500 feet (*Liebmann*), without locality (*Gregg*, 664). Hb. Kew.

14. **Sedum moranense.**

Ramosum, repens, parvifolium, glabrum, caulibus apice paucifloris, foliis sparsis basi solutis crasso-carnosis ovato-oblongis obtusis, floribus racemosis secundis subsessilibus, petalis oblongo-linearibus obtusiusculis.

Herba glabra, basi lignosa, ramis repentibus, superne adscendentibus, teretibus, apice paucifloris. *Folia* sparsa, sessilia, basi soluta, crasso-carnosa, ovato-oblonga, obtusa, 2 lin. longa. *Flores* racemosi, secundi, brevissime pedicellati, magnitudine floris *Sedi* albi, bracteis foliis simillimis; calycis lobi inæquales, oblongi, obtusi, plani, carnosi; petala oblongo-linearia, obtusiuscula, lobis calycinis triplo longiora; stamina 10, alterna breviora, filamentis lineari-subulatis, parum brevioribus quam petala; squamulæ parvæ, carnosæ, obovato-truncatæ. *Carpella* 5, stylis subulatis erectis coronata.—*H. B. K. Nov. Gen. et Sp.* vi. p. 44.

South Mexico, near Real de Moran at 7800 feet (*Humboldt & Bonpland*).

15. **Sedum miserum.**

Herbaceum, annuum, carnosum, procumbens, foliis inferioribus sparsis teretibus, superioribus semicylindraceis, floribus solitariis terminalibus.

Herba annua (glabra?), carnosa, procumbens, ramis 9–12-pollicaribus. *Folia* inferiora sparsa, teretia, depressa, superiora ovato-linearia, semicylindracea, aggregata. *Flores* parvi, virides, sessiles, solitarii, terminales; sepala carnosa, foliis simillima; petala ovata, cucullata, apiculata, dorso aspero-carinata, sepalis breviora; stamina 10, alterna petalina breviora; squamulæ cuneatæ, retusæ.—*Lindley, Bot. Reg.* xxiv. Misc. p. 65.

Mexico.

Formerly cultivated in English gardens from seeds imported by G. F. Dickson, Esq.

16. **Sedum napiferum.**

"Annuum, glaberrimum, radice napiformi, foliis teretiusculis ovoideis basi solutis rotundatis vel subtruncatis, cymis cincinoideis bi-, tri-, plurifurcatis 3–7-floris, pedicellis patentissimis, petalis roseis, squamulis cuneato-spathulatis sæpe bidentatis."

"*Herba* annua, glaberrima, viridis. *Radix* napiformi-fusiformis, parte incrassata 2–5 lin. longa, medio vel infra medium circiter 2 lin. lata, apice plerumque rotundata et subito in filum tenuissimum attenuata. *Caulis* 1–3-pollicaris, a basi ramosus, ramis floriferis, subfastigiatis. *Folia* $1\frac{1}{2}$–1 lin. ab invicem remota, teretiuscula, ovoidea, 2–1 lin. longa, patentia vel adpressa, basi soluta, rotundata vel subtruncata, apice obtusiuscula vel acuta. *Cymæ* cincinoideæ, bi-, tri-, plurifurcatæ, foliaceo-bracteatæ; pedicellis patentissimis, $1\frac{1}{3}$–2 lin. longis; calycis lobi fere æquilongi, 1–2 lin. longi (in sicco $\frac{1}{2}$–1 lin. lati), carnosi, ovoideo-oblongi, basi soluti, subtruncati, apice obtusi; petala calyce $1\frac{1}{2}$–2 longiora, stellatim patentia, rosea, lanceolata, obtusa, argute versus apicem carinata, trinervia; squamulæ minutæ, cuneato-spathulatæ, apice rotundatæ vel truncatæ, integerrimæ vel emarginatæ; stamina 10, calyce duplo longiora, filamentis subulatis, purpureis. *Carpella* $1\frac{1}{3}$ lin. longa, basi vix coalita, acuminata, patentim assurgentia."—*Peyritsch in Linnæa*, xxx. p. 50.

South Mexico, near the city of Toluca, at 8000 feet (*Heller*, 457).

Description after Peyritsch, agreeing with no specimens we have seen.

17. **Sedum oxypetalum.**

Fruticosum, glabrum, ramosissimum, foliis alternis obovato-spathulatis basi attenuatis, floribus sessilibus rubescentibus, petalis linearibus angustato-acuminatis.

Frutex orgyalis, ramosissimus, compactus, glaberrimus, ramis carnosis brevibus. *Folia* sparsa,

subcarnosa, plana, obovata vel spathulata, 6–12 lin. longa, apice rotundata interdumque retusa, basi in petiolum brevem attenuata. *Flores* rubescentes, sessiles, ad 9 lin. diametro; calycis lobi carnosi, ovato-lanceolati, acuti, parum inæquales; petala linearia, plana, angustato-acuminata, quintuplo longiora calyce, persistentia; filamenta filiformia; squamulæ crassiusculæ, oblongæ, emarginatæ, planæ, persistentes. *Carpella* 5, stylis subulatis coronata.—*H. B. K. Nov. Gen. et Sp.* vi. p. 45.

South Mexico, Pedregal, valley of Mexico (*Bourgeau*, 516). Hb. Kew.

This species was originally described from specimens cultivated in Mexican gardens. Bourgeau subsequently found it in a wild state; and it is also in some English gardens now. It is easily distinguished among the frutescent species by its purplish-red flowers.

18. **Sedum parvum,** Hemsley, Diag. Pl. Nov. pars tertia, p. 50.

Herbaceum, perenne, cæspitosum, nanum, ramosum, ramis brevibus crassiusculis, foliis crassis carnosis oblongis patentibus, floribus flavis, sepalis carnosis brevibus obtusis, petalis apice dorso carinatis fere triplo longioribus quam sepala, squamulis minutis, carpellis maximis stylis brevibus rectis vel recurvis coronatis.

Herba perennis, glaberrima, cæspitosa, ramosa, 1½–2 poll. alta, ramis crassiusculis. *Folia* sessilia, crassa, carnosa, oblonga, 1½–3 lineas longa, patentia. *Flores* flavi, subsessiles, ad 5 lineas diametro; sepala carnosa, oblonga, obtusa, brevia; petala lanceolata, acuta, apice dorso carinata, persistentia, sepalis fere triplo longiora; filamenta filiformia; squamulæ minutæ. *Carpella* 5, inflata, stylis brevibus rectis vel recurvis coronata.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 234). Hb. Kew.

A dwarf species, closely resembling *S. acre*, but having spreading leaves.

19. **Sedum prælatum,** DC. (char. emend.).

Fruticosum, erectum, ramosum, glaberrimum, ramis cylindricis incrassatis elongatis tortuosis apice tantum foliosis, foliis nitidis carnosis lanceolato-spathulatis obtusis subacutisve, floribus breviter pedicellatis cymoso-paniculatis, paniculis laxis, calycis lobis oblongo-lanceolatis obtusis, petalis anguste lanceolatis acutissimis, squamulis parvis rotundatis.

Frutex 5–6-pedalis, erectus, ramosus, glaberrimus, ramis cylindricis, incrassatis, elongatis, tortuosis, apice tantum foliosis. *Folia* nitida, carnosa, lanceolato-spathulata, obtusa vel subacuta, 2–2½-pollicaria, basi soluta, fere teretia, infra canaliculata. *Flores* pentameri, ad 8 lin. diametro, flavi, breviter pedicellati, cymoso-paniculati, paniculis amplis, laxis; calycis lobi parvi, carnosi, oblongo-lanceolati, obtusi; petala anguste lanceolata, acutissima, calycis lobis quadruplo longiora, persistentia; filamenta filiformia; squamulæ minutæ, rotundatæ. *Carpella* polysperma, stylis subulatis coronata.—*DC. Pl. Rar. Hort. Bot. Genev.* x. p. 21.

Mexico, without localities (*Jurgensen*, 300; *Gregg*, 634). Hb. Kew.

Described from fresh garden specimens of uncertain origin; but an imperfect specimen, collected by Jurgensen, in hb. Kew. appears to be the same thing.

20. **Sedum retusum,** Hemsley, Diag. Pl. Nov. pars tertia, p. 51.

Fruticosum, glabrum, ramis crassis carnosis, foliis parvis carnosis sessilibus oblongo-obovatis sæpissime retusis, floribus albis cymosis, cymis paucifloris, sepalis lineari-oblongis basi solutis, petalis fere duplo longioribus quam sepala, squamulis parvis obovatis, stylis elongatis.

Frutex glaber, ramis crassis, carnosis, junioribus farinaceis, ad apices tantum foliosis. *Folia* alterna, sessilia, carnosa, obovato-oblonga vel spathulata, maxima semipollicaria, basi soluta et deorsum brevissime producta, apice sæpissime retusa, interdum rotundata. *Flores* albi, 5–6 lineas diametro, dichotomo-cymosi, subsessiles, cymis paucifloris; sepala carnosa, linearioblonga, basi soluta, utrinque obtusa; petala lanceolato-oblonga, acuta, dorso supra medium carinata, sepalis fere duplo longiora; stamina petalis æquilonga; squamulæ parvæ, obovatæ. *Carpella* 6, subinflata, stylis elongatis rectis coronata.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 239). Hb. Kew.

21. **Sedum tortuosum,** Hemsley, Diag. Pl. Nov. pars 1, p. 10.

Fruticosum, glabrum, ramosum, ramis crasso-carnosis tortuosis, foliis sparsis alternis spathulatis planis, venis (in siccis) conspicuis, floribus (albis?) pedicellatis, sepalis carnosis inæqualibus basi productis, petalis (erectis?) lanceolatis.

Frutex glaberrimus, ramosus, ramis crasso-carnosis, tortuosis. *Folia* sparsa, alterna, plana, spathulata, obtusa, ad pollicaria, basi soluta, deorsum producta, venis (in siccis) conspicuis. *Flores* (albi?) breviter pedicellati, ad 9 lineas diametro, in cymas parvas terminales dispositi; sepala fere libera, carnosa, valde inæqualia, basi producta, oblonga, obtusa vel obovata; petala (erecta?) lanceolata, acuta, sepalis duplo longiora; stamina 10, filamentis basi dilatatis; squamulæ carnosæ, breves, semiorbiculares. *Carpella* 5, polysperma, stylis subulatis coronata; semina linearia, fere sesquilineam longa.

MEXICO, without locality (*Parkinson*).

A remarkable species in its fleshy, very tortuous branches.

22. **Sedum wrightii.**

Herbaceum, perenne, glabrum, decumbens vel suberectum, foliis sparsis crasso-carnosis obovatis oblongisve, floribus amplis albis roseo tinctis.

Herba perennis, glabra, decumbens vel suberecta, 6–9-pollicaris, ramis subcarnosis. *Folia* sparsa, crasso-carnosa, obovato-oblonga, 3–5 lin. longa. *Flores* albi, roseo tincti, ampli, numerosi, brevissime pedicellati, in cymas terminales bracteatas plurifurcatas dispositi, bracteis foliis simillimis; calycis lobi oblongi, obtusi, 2½–3 lin. longi, vix carnosi, trinerves; petala 4–5 lin. longa, oblongo-spathulata, apiculata; stamina 10, filamentis dilatatis, petalis æquilongis; squamulæ parvæ, apice rotundatæ. *Carpella* 5, stylis subulatis arcuatis coronata—*A. Gray, Pl. Wright.* i. p. 76.

NEW MEXICO.—NORTH MEXICO, Mount Caruel, Chihuahua, and Puerto de Paysano, Sonora (*Bigelow*); Santa Cruz, Sonora (*Wright*). Hb. Kew.

[DROSERACEÆ.—Of this order we have seen no specimen or record of any species having been found in our territory; but it is likely to occur, as there are several species in North America (two of them reaching California) and also several in South America.]

Order L. HAMAMELIDEÆ.

Hamamelideæ, Benth. et Hook. Gen. Plant. i. p. 664.

About thirty-six arboreous and shrubby species, belonging to sixteen or eighteen genera. They are natives of the temperate and subtropical regions of Asia, South Africa, North America, and Europe.

1. LIQUIDAMBAR.

Liquidambar, Linn. Gen. Plant. n. 1076; Benth. et Hook. Gen. Plant. i. p. 669.

Besides the American species, one or two are found in China, one in Japan, and one in Asia Minor.

1. **Liquidambar macrophylla,** Œrst. L'Amér. Centr. t. 10, 11.
CENTRAL AMERICA (*Œrsted*).

2. **Liquidambar styraciflua,** Linn. Sp. Pl. p. 1418; Œrst. L'Amér. Centr. t. 11.
CONNECTICUT and ILLINOIS southward to—SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 1432), region of Orizaba (*Bourgeau*, 2412). Hb. Kew.

3. **Liquidambar,** sp.
GUATEMALA ? (*Warszewicz*). Hb. Kew.

Order LI. HALORAGEÆ.

Haloragеæ, Benth. et Hook. Gen. Plant. i. p. 673.

About eighty species of herbs and dwarf shrubs, belonging to nine or ten genera. Many of them are aquatic plants having a wide range of distribution.

1. PROSERPINACA.

Proserpinaca, Linn. Gen. Plant. n. 102; Benth. et Hook. Gen. Plant. i. p. 675.

Two species of aquatic herbs, restricted to North America and the West Indies.

1. **Proserpinaca palustris,** Linn. in Act. Ups. 1741, p. 81; DC. Prodr. ii. p. 67.
Eastern side of NORTH AMERICA from CANADA to—SOUTH MEXICO, marshes near Jalapa (*Linden*, 642), in sluggish streams near Jalapa (*Schiede*).—Also in some of the WEST-INDIAN ISLANDS. Hb. Kew.

[*Hippuris vulgaris*, Linn., a widely dispersed aquatic, may be looked for in Mexico.]

2. GUNNERA.

Gunnera, Linn. Mant. 16; Benth. et Hook. Gen. Plant. i. p. 676.

About twelve herbaceous species, dispersed in South Africa, Abyssinia, Java, Tasmania, New Zealand, Sandwich Islands, and America, from Mexico to Patagonia and Juan Fernandez.

1. **Gunnera (Pankea) insignis,** Œrst. in Vidensk. Meddel. 1857, p. 189; L'Amér. Centr. t. 18.

COSTA RICA, Volcan Irazu (*Œrsted*).

2. **Gunnera,** sp.

SOUTH MEXICO, Tortula, Vera Cruz, on the margin of the water (*Linden,* 82). Hb. Kew.

3. MYRIOPHYLLUM.

Myriophyllum, Linn. Gen. Plant. n. 1066; Benth. et Hook. Gen. Plant. i. p. 676.

Aquatic herbs. About fifteen species, generally dispersed, both in hot and cold regions. Most likely other species will be found in Mexico and Central America.

1. **Myriophyllum heterophyllum,** Michx. Fl. Am.-Bor. ii. p. 191.

CANADA southward to—NORTH MEXICO, Ojo Caliente, Chihuahua (*Thurber*).

4. CALLITRICHE.

Callitriche, Linn. Gen. Plant. n. 13; Benth. et Hook. Gen. Plant. i. p. 676.

Aquatic or amphibious herbs. About a dozen species, some of them having a very wide range.

1. **Callitriche asa-græi,** Hegelm. Monogr. p. 54, t. 3. f. 9, t. 4. f. 1.

Widely dispersed in NORTH AMERICA.—SOUTH MEXICO (*Schaffner*).

2. **Callitriche deflexa,** A. Br. ex Hegelm. Monogr. p. 58, t. 3. fig. 2, t. 4. fig. 4.

Southern States of NORTH AMERICA.—SOUTH MEXICO, Orizaba (*Botteri,* 834).—CUBA; BRAZIL. Hb. Kew.

The Mexican specimen is doubtful.

3. **Callitriche verna,** Linn. pro parte, ex Hegelm. Monogr. p. 55, t. 3. fig. 10.

Widely dispersed in NORTH AMERICA southward to—MEXICO, San Luis Potosi (*Schaffner*).—CHILI; also in EUROPE and ASIA. Hb. Kew.

Order LII. RHIZOPHORACEÆ.

Rhizophoreæ, Benth. et Hook. Gen. Plant. i. p. 677.

Trees and shrubs. About fifty species, in seventeen genera; natives of tropical countries, chiefly on the muddy shores.

Tribe RHIZOPHOREÆ.

1. RHIZOPHORA.

Rhizophora, Linn. Gen. Plant. n. 592; Benth. et Hook. Gen. Plant. i. p. 678.

About six species, generally dispersed on tropical shores.

1. **Rhizophora mangle,** Linn. Sp. Pl. p. 634; Jacq. Amer. t. 89.

Mexico (*Schiede*); Panama, very common on the sea-shore from Panama to North-west Mexico (*Seemann*).—Coast of Tropical America and the West-Indian Islands. The same species is said to be found in West Tropical Africa. Hb. Kew.

Tribe LEGNOTIDEÆ.

2. CASSIPOUREA.

Cassipourea, Aubl. Pl. Guian. i. p. 529; Benth. et Hook. Gen. Plant. i. p. 682.

Three species, restricted to Tropical America.

1. **Cassipourea elliptica,** Poir. Suppl. ii. p. 34.

Legnotis elliptica, Swartz, Fl. Ind. Occ. t. 17.

Panama, Aspinwall, in swamps (*S. Hayes*, 160), Chagres (*Fendler*, 191), island of Coiba (*Seemann*, 633).—West Indies and Colombia. Hb. Kew.

Order LIII. COMBRETACEÆ.

Combretaceæ, Benth. et Hook. Gen. Plant. i. p. 683.

About 250 species of trees and shrubs, belonging to fifteen genera. Generally dispersed in tropical regions; rarer in subtropical.

Suborder *COMBRETEÆ.*

1. TERMINALIA.

Terminalia, Linn. Mant. n. 1283; Benth. et Gen. Plant. i. p. 685.

About eighty or ninety species, more numerous in the Old World than in America.

1. **Terminalia buceras,** Benth. et Hook. Gen. Plant. i. p. 686.

Bucida buceras, Linn. Sp. Pl. p. 556; Bot. Reg. t. 907.

Panama, Aspinwall (*S. Hayes*).—West Indies and northern parts of South America. Hb. Kew.

2. **Terminalia excelsa,** Liebm. (MSS.?).

South Mexico, Mirador (*Liebmann*). Hb. Kew.

This name does not appear to have been published; and the material in Kew herbarium is insufficient for description.

3. **Terminalia oblonga,** Steud. Nomencl. Bot. ii. p. 668.

Chuncoa oblonga, Poir. Suppl. ii. p. 258.

GUATEMALA, in woods about Mazatenango (*Bernoulli*, 524).—Southward to PERU. Hb. Kew.

4. **Terminalia obovata,** Steud. Nomencl. Bot. ii. p. 668.

Chuncoa obovata, Poir. Suppl. ii. p. 258.

PANAMA, in woods near Paraiso railway-station (*S. Hayes*, 718), around the town of Cruces (*Seemann*, 595).—PERU, GUIANA, and TRINIDAD. Hb. Kew.

2. CONOCARPUS.

Conocarpus, Gærtn. Fruct. ii. p. 470, t. 177, et iii. t. 216; Benth. et Hook. Gen. Plant. i. p. 686.

The only species.

1. **Conocarpus erecta,** Linn. Hort. Cliff. p. 485; Jacq. Amer. p. 78, t. 52. fig. 1.

FLORIDA.—SOUTH MEXICO, Acapulco (*Thiebaut*), Vera Cruz (*Linden*, 12), without locality (*Harris*; *Jurgensen*, 117).—Widely dispersed on the coast of TROPICAL AMERICA and the WEST INDIES, and in the GALAPAGOS ISLANDS; also in WEST TROPICAL AFRICA.

3. LAGUNCULARIA.

Laguncularia, Gærtn. Fruct. iii. p. 209; Benth. et Hook. Gen. Plant. i. p. 688.

The only species.

1. **Laguncularia racemosa,** Gærtn. Fruct. iii. p. 209, t. 217. fig. 2.

PANAMA, coast near the city of Panama (*Seemann*, 308).—Widely dispersed on the sea-shores of the WEST INDIES and TROPICAL AMERICA; also in West Tropical AFRICA.

4. COMBRETUM.

Combretum, Linn. Gen. Plant. n. 475; Benth. et Hook. Gen. Plant. i. p. 688.

About 120 species in Tropical and Subtropical America, Asia, and Africa; most numerous in the last-named country. Absent from Australia and the islands.

1. **Combretum adenophyllum,** Mart. in Linnæa, xxiv. Beibl. 2, p. 1.

PANAMA, Paredez Islands, on the coast of Veraguas (*Seemann*).—BRAZIL.

2. **Combretum alternifolium,** Pers. Ench. ii. p. 42.

Poivrea alternifolia, DC. Prodr. iii. p. 17.

PANAMA, island of Iguana (*Seemann*).—TROPICAL SOUTH AMERICA.

3. **Combretum argenteum,** Bert. Fl. Guat. p. 12.

GUATEMALA, Volcan de Agua (*Velasquez*).

4. **Combretum benthamianum,** Van Heurck et Müll. Arg. Desc. Plant. Nov. fasc. ii. p. 220.

HONDURAS, Tigré Island, Gulf of Fonseca (*Sinclair*). Hb. Kew.

5. **Combretum erianthum,** Benth. Pl. Hartw. p. 73.

Combretum argenteum, Bert.?

Guatemala (*Hartweg*, 526). Hb. Kew.

6. **Combretum farinosum,** H. B. K. Nov. Gen. et Sp. vi. p. 110.

South Mexico, Acapulco (*Barclay*), Tepic and Acapulco (*Lay & Collie*), near Actopan (*Schiede*), between Acapulco and Venta del Exido, 1300 feet (*Humboldt & Bonpland*), Mexico (*Hahn*; *Jurgensen*, 174), common on the sea-shore of the Pacific Ocean (*Seemann*); Guatemala (*Skinner*); Honduras, Gulf of Fonseca, Tigré Island (*Sinclair*). Hb. Kew.

7. **Combretum jacquini,** Griseb. Fl. Brit. W. Ind. p. 275.

Combretum laxum, Jacq. Amer. p. 104.

Combretum secundum, Jacq.

Honduras (*Grisebach*); Central America (*Barclay*); Panama, southern part of Veraguas (*Seemann*, 1209), Rio Grande railway-station (*S. Hayes*, 446).—West Indies and Tropical America. Hb. Kew.

8. **Combretum micropetalum,** DC. Prodr. iii. p. 19?

Nicaragua, Chontales (*Tate*, 250). Hb. Kew.

The type is a Brazilian plant.

9. **Combretum ~~mexicanum~~,** Humb. et Bonpl. Pl. Æquin. ii. p. 159, t. 132.

South Mexico, near Acapulco (*Humboldt & Bonpland*, *Hænke*, *Lay & Collie*). Hb. Kew.

10. **Combretum ~~reticulatum~~,** Presl, Reliq. Hænk. ii. p. 25.

Mexico.

11. **Combretum,** sp.

Panama, Frijoli railway-station (*S. Hayes*). Hb. Kew.

12. **Combretum,** sp.

Panama, Empire railway-station (*S. Hayes*). Hb. Kew.

5. CACOUCIA.

Cacoucia, Aubl. Pl. Guian. i. p. 450; Benth. et Hook. Gen. Plant. i. p. 688.

Four species are described; all of them inhabit West Tropical Africa; and the following one is common to both continents:—

1. **Cacoucia coccinea,** Aubl. Guian. i. p. 450, t. 179.

Panama, in swamps, Lion-Hill railway-station (*S. Hayes*, 541).—Trinidad, Brazil, and Guiana; also in West Tropical Africa. Hb. Kew.

Suborder *GYROCARPEÆ.*

6. GYROCARPUS.

Gyrocarpus, Jacq. Stirp. Amer. p. 282; Benth. et Hook. Gen. Plant. i. p. 689.

The only species.

1. **Gyrocarpus jacquini,** Roxb. Pl. Corom. i. p. 2, t. 1.

Gyrocarpus americanus, Jacq. Amer. p. 282, t. 178. fig. 80.

South Mexico, Baño de Mariara and near Zumpango (*Humboldt & Bonpland*); San Salvador, Acajutla (*S. Hayes*).—Venezuela and Colombia; also in West Tropical Africa, Tropical Asia, and Australia. Hb. Kew.

Schlechtendal, in Linnæa, xvi. pp. 397–400, distinguishes the following varieties:—

α. **jacquinii,** Jacq. Amer. t. 178. fig. 80.

β. **gærtneri,** Gærtn. Sem. ii. p. 92, t. 97.

γ. **humboldtii,** H. B. K. Nov. Gen. et Sp. vii. p. 193.

δ. **schiedei,** Schl. in Linnæa, xvi. p. 399.

South Mexico, Hacienda de Atlacomulco, near Cuernavaca (*Schiede*).

7. SPARATTANTHELIUM.

Sparattanthelium, Mart. in Flora, 1841, ii. Beibl. p. 40; Benth. et Hook. Gen. Plant. i. p. 690.

Three or four species, restricted to Eastern Tropical America, from Mexico to Brazil.

1. **Sparattanthelium,** sp.

South Mexico, without locality (*Jurgensen*). Hb. Kew.

Order LIV. MYRTACEÆ.

Myrtaceæ, Benth. et Hook. Gen. Plant. i. p. 690.

A large order of trees and shrubs, comprising about eighty genera and nearly 2000 species. Two tribes are almost exclusively restricted to Australia and neighbouring islands, and include upwards of forty genera and 650 species. The Myrteæ and Lecythideæ combined are even more numerous in South America as to species; and there is also a considerable number in Tropical and Subtropical Asia. About a dozen species are found in the whole of Africa; and one is a native of the south of Europe. In America none is found north of Mexico and South Florida.

Tribe MYRTEÆ.

This tribe is generally diffused, but by far most numerous in South America. Berg (Flora Brasiliensis, xiv. pars 1) estimates the number of American species of this tribe at 1630; but he appears to have unduly multiplied them, and many of the following can only be considered slight varieties.

1. PSIDIUM.

Psidium, Linn. Gen. Plant. n. 615; Benth. et Hook. Gen. Plant. i. p. 713.

The genus is restricted to America; and Berg enumerates about 100 species.

1. **Psidium araca,** Raddi, Opusc. Sc. iv. p. 854.

Guatemala (*Friedrichsthal*). Grows wild and cultivated in Tropical America and the West Indies. Hb. Kew.

2. **Psidium costaricensis,** Berg in Linnæa, xxvii. p. 368.

Costa Rica, Volcan de Irazu (*Œrsted*).

3. **Psidium laurifolium,** Berg in Linnæa, xxvii. p. 364.

Nicaragua, Masaya (*Œrsted*).

4. **Psidium molle,** Bertol. Fl. Guat. p. 22, t. 9; Berg in Linnæa, xxvii. p. 368.

α. **robustum,** Berg, loc. cit.

Guatemala (*Velasquez*); Costa Rica, Candelaria Mts. (*Œrsted*).

β. **gracile,** Berg, loc. cit.

Costa Rica, Volcan de Irazu (*Œrsted*).

5. **Psidium œrstedianum,** Berg in Linnæa, xxvii. p. 360.

Guatemala, Monte Rincon (*Friedrichsthal*); Costa Rica, Guanacaste (*Œrsted*).

6. **Psidium pomiferum,** Linn. Sp. Pl. p. 672.

Psidium pyriferum, Linn. Sp. Pl. p. 672.

Psidium guava, Radd.

South Mexico, Orizaba (*Botteri*, 830), Zimapan (*Coulter*, 138), valley of Cordova (*Bourgeau*, 1886); Guatemala (*Friedrichsthal*); Nicaragua, Chontales (*Tate*); Panama, Chagres (*Fendler*, 306).—A native of Tropical America, where it is also widely cultivated, as well as in other countries. Hb. Kew.

7. **Psidium polycarpon,** Lamb. in Trans. Linn. Soc. xi. p. 231, t. 17.

South Mexico, Jalapa (*Linden*, 587); Panama (*Seemann*).—North part of South America. Hb. Kew.

8. **Psidium schiedeanum,** Berg in Linnæa, xxvii. p. 368.

Mexico (*Schiede*, 541).

Bentham and Hooker (Gen. Plant. i. p. 713) mention *Calyptropsidium friedrichsthalianum* as closely allied to this genus.

2. CALYCOLPUS.

Calycolpus, Berg in Linnæa, xxvii. p. 378; Benth. et Hook. Gen. Plant. i. p. 713.

Eight species are enumerated, all restricted to Tropical America.

1. **Calycolpus glaber,** Berg in Mart. Fl. Bras. xvii.

Campomanesia glabra, Benth.

Campomanesia gœtheana, Berg?

Panama, in meadows near the city of Panama (*Seemann*, 282), Chagres (*Fendler*, 105), Rio Grande railway-station and elsewhere (*S. Hayes*, 404, 472).—Colombia, Guiana, and Brazil. Hb. Kew.

3. MYRTUS.

Myrtus, Linn. Gen. Plant. n. 617; Benth. et Hook. Gen. Plant. i. p. 714.

Upwards of 100 species have been enumerated; but they should probably be reduced to nearly half that number. The greater part are South-American, many of them extratropical, though the genus is generally dispersed in the Old World, and the only species of the family indigenous in the Mediterranean region belongs to this genus.

1. **Myrtus arayan,** H. B. K. Nov. Gen. et Sp. vi. p. 133.

Pseudocaryophyllus seemanni, Triana.

Eugenia arayan, Seem.

Panama, Boquete Veraguas (*Seemann*, 1150).—Southward to Peru. Hb. Kew.

2. **Myrtus berlandieriana,** Berg in Linnæa, xxvii. p. 403.

Mexico (*Berlandier*).

3. **Myrtus ehrenbergii,** Berg in Linnæa, xxvii. p. 404.

?North Mexico, San Luis Potosi to Tampico (*Palmer*, 1124); South Mexico (*Ehrenberg*, 1039). Hb. Kew.

4. **Myrtus maritima,** H. B. K. Nov. Gen. et Sp. vi. p. 146.

South Mexico, Acapulco (*Humboldt & Bonpland*).

5. **Myrtus montana,** Benth. Pl. Hartw. p. 61.

Ugni montana, Berg.

South Mexico, Mount Pelado, 7000 feet (*Hartweg*, 459). Hb. Kew.

6. **Myrtus œrstedii,** Hemsl.

Ugni œrstedii, Berg in Linnæa, xxvii. p. 389.

Costa Rica, without locality (*Hoffmann*), Volcan de Irazu, 9000 feet (*Œrsted*). Hb. Kew.

7. **Myrtus,** sp.

South Mexico, Orizaba (*Botteri*, 1036). Hb. Kew.

8. **Myrtus,** sp.

South Mexico, Orizaba (*Botteri*, 1009). Hb. Kew.

4. MYRCIA.

Myrcia, DC. Prodr. iii. p. 242; Benth. et Hook. Gen. Plant. i. p. 716.

This genus is peculiar to America; and Berg describes upwards of 500 species, which Bentham and Hooker think may be reduced to 300.

1. **Myrcia acuminata,** DC. Prodr. iii. p. 256.
Panama, Veraguas (*Hinds*).—Colombia. Hb. Kew.

2. **Myrcia costaricensis,** Berg in Linnæa, xxvii. p. 104.
Costa Rica (*Œrsted*).

3. **Myrcia ? cucullata,** Berg in Linnæa, xxvii. p. 97.
Panama, Santiago de Veraguas (*Seemann*, 1148), Boquete (*Seemann*, 1669).—Venezuela. Hb. Kew.

4. **Myrcia discolor,** Berg in Linnæa, xxvii. p. 111.
Costa Rica (*Œrsted*).

5. **Myrcia melanoclada,** Berg in Linnæa, xxvii. p. 113.
Costa Rica, near Cartago (*Œrsted*).

6. **Myrcia œrstediana,** Berg in Linnæa, xxvii. p. 112.
Costa Rica, Cartago and Turrialba (*Œrsted*).

7. **Myrcia plicato-costata,** Berg in Linnæa, xxvii. p. 114.
Costa Rica, Turrialba (*Œrsted*).

8. **Myrcia sartoriana,** Berg in Linnæa, xxix. p. 220.
South Mexico, Mirador, Vera Cruz (*Sartorius*).

9. **Myrcia,** sp.
South Mexico, Jocotepec, Oaxaca (*Liebmann*). Hb. Kew.

5. CALYPTRANTHES.

Calyptranthes, Swartz, Fl. Ind. Occ. p. 917; Benth. et Hook. Gen. Plant. i. p. 717.

An exclusively American genus, of which seventy-three species are enumerated.

1. **Calyptranthes ? bullata,** DC. Prodr. iii. p. 258.
Myrtus bullata, Salisb. Prodr. p. 354.
Honduras.

2. **Calyptranthes chytraculia,** Sw. Prodr. p. 79; Fl. Ind. Occ. p. 921.
Calyptranthes pendula, Berg.
South Mexico, rivers at 3000 feet, Cordillera of Vera Cruz (*Galeotti*, 2870).—Jamaica, Cuba. Hb. Kew.

3. **Calyptranthes costaricensis,** Berg in Linnæa, xxvii. p. 20.
Costa Rica and Veraguas (*Warszewicz*).

4. **Calyptranthes karwinskiana,** Berg in Linnæa, xxix. p. 214.
South Mexico, Mesa Chica (*Karwinski*).

5. **Calyptranthes lindeniana,** Berg in Linnæa, xxix. p. 213.
South Mexico, banks of the river Teapa (*Linden*, 620). Hb. Kew.

6. **Calyptranthes schiedeana,** Berg in Linnæa, xxvii. p. 28.

Myrcia aromatica, Schl. in Linnæa, xiii. p. 415, pro parte.

South Mexico, Hacienda de la Laguna (*Schiede*); Panama, Isle of Taboga (*Barclay*). Hb. Kew.

7. **Calyptranthes schlechtendaliana,** Berg in Linnæa, xxvii. p. 29.

Myrcia aromatica, Schl. in Linnæa, xiii. p. 415, pro parte.

South Mexico, Zacuapan, Vera Cruz (*Linden*, 594); Panama, island of Coiba (*Seemann*, 634). Hb. Kew.

6. CALYCORECTES.

Calycorectes, Berg in Linnæa, xxvii. p. 317; Benth. et Hook. Gen. Plant. i. p. 720.

An American genus of about eight species.

1. **Calycorectes mexicana,** Berg in Linnæa, xxvii. p. 318.

South Mexico, Cordillera of Oaxaca (*Galeotti*, 2867).

7. CALYPTROPSIDIUM.

Calyptropsidium, Berg in Linnæa, xxvii. p. 349; Benth. et Hook. Gen. Plant. i. p. 713, sub *Psidio*.

1. **Calyptropsidium friedrichsthalianum,** Berg in Linnæa, xxvii. p. 350.

Guatemala (*Friedrichsthal*).

8. PIMENTA.

Pimenta, Lindl. Collect. Bot. sub n. 19; Benth. et Hook. Gen. Plant. i. p. 717.

This genus is restricted to America, and, including Berg's genus *Amomis*, numbers five species.

1. **Pimenta officinalis,** Berg in Linnæa, xxvii. p. 422.

Eugenia pimenta, DC.

Berg distinguishes the following varieties:—

α. **longifolia,** Bot. Mag. t. 1236.

β. **cumanensis,** Berg, loc. cit.

Myrtus tabasco, Willd.

γ. **ovalifolia,** Berg, loc. cit.

δ. **tenuifolia,** Berg, loc. cit.

ε. **tabasco,** Schl. in Linnæa, v. p. 542.

South Mexico (*Schiede & Deppe*); Costa Rica (*Œrsted*).—A native of Tropical America, where it is also cultivated, as well as in India &c. Hb. Kew.

9. EUGENIA.

Eugenia, Linn. Gen. Plant. n. 616; Benth. et Hook. Gen. Plant. i. p. 718.

This genus has nearly the same range as the family; but it is most numerous in

species in South America and Tropical and Subtropical Asia. Upwards of 700 species have been described; and there may be as many as 500 distinct ones.

1. **Eugenia calycorectoides,** Berg in Linnæa, xxix. p. 236.
South Mexico (*Linden*, 593).

2. **Eugenia capuli,** Ch. et Schl. in Linnæa, v. p. 560.

Var. *α*. **micrantha,** Berg in Linnæa, xxvii. p. 239.
South Mexico, near Papantla (*Schiede*, 546), Tlacotalpa (*Ehrenberg*, 1187).

Var. *β*. **macroterantha,** Berg, loc. cit.
South Mexico, in woods near Jalapa and between Vera Cruz and Santa Fé (*Schiede*, 546).

3. **Eugenia cartagensis,** Berg in Linnæa, xxvii. p. 240.
Costa Rica, near Cartago (*Ærsted*).

[4. **Eugenia caryophyllata,** Thunb. Diss. p. 1.
Caryophyllus aromaticus, Linn. Bot. Mag. t. 2749 and 2750.
A native of the Moluccas; cultivated in Mexico, Sierra Madre (*Seemann*).]

5. **Eugenia colipensis,** Berg in Linnæa, xxix. p. 243.
South Mexico, Colipa (*Karwinski*, 241).

6. **Eugenia costaricensis,** Berg in Linnæa, xxvii. p. 213.
Costa Rica and Panama (*Warszewicz*).

7. **Eugenia irazuensis,** Hemsl.
Ugni ærstedii, Berg in Linnæa, xxvii. p. 389.
Costa Rica, Volcan de Irazu, at 9000 feet (*Ærsted*).

8. **Eugenia karswinskyana,** Berg in Linnæa, xxix. p. 244.
South Mexico, Huejotla (*Karwinski*, 242).

9. **Eugenia fieldingii,** Berg in Linnæa, xxix. p. 242.
Mexico (*Fielding*), ex Berg, loc. cit.
Probably some Brazilian plant given to Berg by Fielding.

10. **Eugenia friedrichsthalii,** Hemsl.
Ugni friedrichsthalii, Berg in Linnæa, xxvii. p. 388.

Var. *α*. **longipes,** Berg, loc. cit.

Var. *β*. **brevipes,** Berg, loc. cit.
Guatemala (*Friedrichsthal*).

11. **Eugenia lepidota,** Berg in Linnæa, xxvii. p. 226.

Var. *α*. **corymbosa,** Berg, loc. cit.

Var. β. **pauciflora,** Berg, loc. cit.
Costa Rica, Volcan de Barba (*Ærsted*).

12. **Eugenia leucadendron,** Berg in Linnæa, xxvii. p. 202.
Costa Rica, near Cartago (*Ærsted*).

13. **Eugenia lindeniana,** Berg in Linnæa, xxix. p. 240.
South Mexico, banks of streams, Teapa (*Linden*, 619). Hb. Kew.

14. **Eugenia macrocarpa,** Schl. in Linnæa, v. p. 560.
South Mexico, in woods, Jalapa (*Galeotti*, *Schiede*, 544). Hb. Kew.

15. **Eugenia ærstediana,** Berg in Linnæa, xxvii. p. 285.
Costa Rica, between Sapoa and Tortuga (*Ærsted*).

16. **Eugenia oreinoma,** Berg in Linnæa, xxvii. p. 157.
Costa Rica, Candelaria and Ujaras (*Ærsted*).

17. **Eugenia origanoides,** Berg in Linnæa, xxix. p. 229.
South Mexico, in shady woods near Papantla (*Karwinski*, 238).

18. **Eugenia schiedeana,** Schl. in Linnæa, xiii. p. 418.
South Mexico, Jalapa (*Coulter*, 133), Cordillera of Vera Cruz, in woods at 3000 feet (*Galeotti*, 2872), Zacuapan (*Linden*, 591), Orizaba (*Bourgeau*, 303; *Botteri*, 1034), valley of Cordova (*Bourgeau*, 1509). Hb. Kew.

19. **Eugenia sericiflora,** Benth. Bot. Voy. Sulph. p. 89.
Panama, island of Taboga (*Sinclair*, *Lobb*).
Var. foliis angustioribus.
Panama, Santiago de Veraguas (*Seemann*, 1149). Hb. Kew.

20. **Eugenia truncata,** Berg in Linnæa, xxvii. p. 157.
Costa Rica, Candelaria Mt. (*Ærsted*).

21. **Eugenia trunciflora,** Berg in Linnæa, xxvii. p. 223.
Myrtus trunciflora, Schl.
South Mexico, Mirador (*Linden*, 593), near Jalapa, at 3000 feet (*Galeotti*, 2867). Hb. Kew.

22. **Eugenia warszewiczii,** Hemsl.
Ugni warscewiczii, Berg in Linnæa, xxvii. p. 390.
Panama, Veraguas (*Warszewicz*).

23. **Eugenia xalapensis,** DC. Prodr. iii. p. 276.
Myrtus xalapensis, H. B. K.
North Mexico, San Luis Potosi to Tampico (*Palmer*, 1045); South Mexico, near

Jalapa, at 4200 feet (*Humboldt & Bonpland*, *Coulter*, *Linden*, 584), below Cuesta Grande de Chiconquiaco (*Galeotti*), woods at 4000 feet, Cordillera of Vera Cruz (*Galeotti*, 2874), valley of Cordova. Hb. Kew.

24. **Eugenia,** sp.

South Mexico, near Tantoyuca Huasteca (*Ervendberg*, 312), Orizaba (*Botteri*, 1028). Hb. Kew.

25. **Eugenia,** sp.

South Mexico, valley of Cordova (*Bourgeau*, 2169). Hb. Kew.

26. **Eugenia,** sp. (*E. xalapensi* aff.).

Guatemala, in thickets between Esquipulas and Jupilingo (*Bernoulli*, 741). Hb. Kew.

27. **Eugenia,** sp. (? spec. fruct. *E. trunciflorœ*).

Mexico (*Hahn*). Hb. Kew.

28. **Eugenia,** sp.

South Mexico (*Sumichrast*, 1955). Hb. Kew.

29. **Eugenia,** sp.

South Mexico, region of Orizaba, Escamella (*Bourgeau*, 3253). Hb. Kew.

30. **Eugenia,** sp.

Mexico (*Hahn*, 1). Hb. Kew.

31. **Eugenia,** sp.

South Mexico, Chuapan, Oaxaca (*Liebmann*). Hb. Kew.

32. **Eugenia,** sp.

South Mexico, woods at 5000 feet, Cordillera of Vera Cruz (*Galeotti*, 2864). Hb. Kew.

33. **Eugenia,** sp.

Panama, common in woods about the city of Panama (*S. Hayes*, 679). Hb. Kew

34. **Eugenia,** sp. (aff. *E. sericiflorœ*, Benth.).

Panama, in woods near the city (*S. Hayes*, 644). Hb. Kew.

35. **Eugenia,** sp.

Panama, Rio Grande railway-station (*S. Hayes*, 344). Hb. Kew.

36. **Eugenia,** sp.

South Mexico, shady forests of Teapa (*Linden*, 623). Hb. Kew.

37. **Eugenia,** sp.

Guatemala (*Skinner*, 3). Hb. Kew.

38. **Eugenia,** sp.

PANAMA, Bujio railway-station (*S. Hayes*, 400), in shady woods around the town of San Juan (*Seemann*, 476). Hb. Kew.

Most likely a considerable proportion of these unnamed specimens belong to described species.

10. MITRANTHES.

Mitranthes, Berg, Linnæa, xxvii. p. 316; Benth. et Hook. Gen. Plant. i. p. 717, where it is united with *Calyptranthes*.

Eight American species are described.

1. **Mitranthes sartoriana,** Berg in Linnæa, xxix. p. 248.

SOUTH MEXICO, Mirador (*Sartorius*).

Tribe LECYTHIDEÆ.

This tribe is principally Tropical American, and the true Lecythidaceæ (considered by some botanists a distinct natural order) exclusively so. Miers has recently monographed them (Trans. Linn. Soc. vol. xxx.), dividing them into twelve genera and 183 species.

11. GUSTAVIA.

Gustavia, Linn. Amœn. Acad. viii. p. 266; Benth. et Hook. Gen. Plant. i. p. 721; Miers in Trans. Linn. Soc. xxx. p. 175.

Bentham and Hooker estimate the number of species at eleven; Miers describes twenty-one.

1. **Gustavia angustifolia,** Benth. Bot. Voy. Sulph. p. 99.

PANAMA, forming entire woods in the central districts (*Seemann*). Hb. Kew.

2. **Gustavia latifolia,** Miers in Trans. Linn. Soc. xxx. p. 182.

Gustavia speciosa, Benth. nec DC.

Pirigara speciosa, Kth.

PANAMA, near the city of Panama (*Seemann*).—GUIANA and N. BRAZIL. Hb. Kew.

3. **Gustavia superba,** Berg in Linnæa, xxvii. p. 444.

Gustavia insignis, Bot. Mag. t. 5069.

Pirigara insignis, Kth.

PANAMA (*Seemann*, 579).—COLOMBIA, ECUADOR. Hb. Kew.

Var. **salviniæ,** Hemsley. (Tab. XXII.)

Foliis petiolatis vix membranaceis usque ad 4–6 ped. longis et 1 latis, petalis angustioribus.

PANAMA, Obispo station (*Salvin*). Hb. Kew.

This may prove to be a distinct species; but the material in herbaria is insufficient to determine this point.

12. GRIAS.

Grias, Linn. Gen. Plant. n. 659; Benth. et Hook. Gen. Plant. i. p. 722; Miers in Trans. Linn. Soc. xxx. p. 298.

Four species.

1. **Grias fendleri,** Seem. Bot. Voy. 'Herald,' p. 126.
PANAMA, Chagres (*Fendler*). Hb. Kew.

13. COUROUPITA.

Couroupita, Aubl. Pl. Guian. p. 708; Benth. et Hook. Gen. Plant. i. p. 722; Miers in Trans. Linn. Soc. xxx. p. 188.

Miers describes nine species, Berg only four.

1. **Couroupita nicaraguensis,** DC. Prodr. iii. p. 294.
NICARAGUA.

2. **Couroupita odoratissima,** Seem. Bot. Voy. 'Herald,' p. 126.
PANAMA, Rio Jesus, Veraguas (*Seemann*).
"This is the celebrated Palo Paraiso of Veraguas" (*Seemann*). Hb. Kew.

14. LECYTHIS.

Lecythis, Linn. Gen. Plant. n. 664; Benth. et Hook. Gen. Plant. i. p. 723; Miers in Trans. Linn. Soc. xxx. p. 200.

Miers enumerates upwards of forty species under this genus, and refers about fifty to other genera.

1. **Lecythis coriacea?,** DC. Prodr. iii. p. 291.
PANAMA, dark forests near Remedios (*Seemann*). Hb. Kew.

Order LV. MELASTOMACEÆ.

Melastomaceæ, Benth. et Hook. Gen. Plant. i. p. 725; Triana in Trans. Linn. Soc. xxviii.

Bentham and Hooker describe 134 genera, and estimate the number of species at 1800. Triana enumerates 1763 species, and retains the same number of genera. The family is generally dispersed in tropical and subtropical regions, but much more numerous in America than in the Old World, and very rare in Australia, the Pacific islands, and South Africa. A few species are found in Eastern Temperate North America. Where not otherwise stated, the genera consist entirely of woody plants, either shrubby or arboreous.

Suborder *MELASTOMEÆ.*

Tribe MICROLICIEÆ.

This tribe comprises seventeen genera and about seventy-five species, all endemic in America.

1. RHYNCHANTHERA.

Rhynchanthera, DC. Prodr. iii. p. 106; Benth. et Hook. Gen. Plant. i. p. 738; Triana in Trans. Linn. Soc. xxviii. p. 31.

There are twenty-four herbaceous and shrubby species dispersed from Mexico to Paraguay, South Brazil, and Peru, but these are most numerous on the eastern side of the continent. None have been collected in the West Indies.

1. **Rhynchanthera insignis,** Naud. in Ann. Sc. Nat. sér. 3, xii. p. 210.

South Mexico, without localities (*Sallé*; *Jurgensen*, 607); Panama, in somewhat shady places near the town of Agua Dulce (*Seemann*, 74). Hb. Kew.

2. **Rhynchanthera mexicana,** DC. Prodr. iii. p. 188; Calques des Dess. Fl. Mex. 342.

Mexico (*Moçino & Sessé*).

2. CENTRADENIA.

Centradenia, G. Don, Gen. Syst. ii. p. 765; Benth. et Hook. Gen. Plant. i. p. 739; Triana in Trans. Linn. Soc. xxviii. p. 32.

The genus is restricted to Mexico and Central America, and consists of herbaceous or half-shrubby plants.

1. **Centradenia floribunda,** Planch. in Flore des Serres, v. t. 453.

Mexico.

2. **Centradenia grandifolia,** Endl. Gen. Pl. p. 1207; Bot. Mag. t. 5228.

Plagiophyllum grandifolium, Schl.

South Mexico, near Chiconquiaco and Cuesta Grande de Chiconquiaco (*Schiede*). Hb. Kew.

3. **Centradenia inæquilateralis,** G. Don, Gen. Syst. ii. p. 765.

Centradenia rosea, Lindl. Bot. Reg. xxix. t. 20.

Plagiophyllum parvifolium, Schl.

South Mexico, valley of Cordova (*Bourgeau*, 1964), Jalapa (*Galeotti*, 2925), Mirador (*Liebmann*; *Linden*, 613), Orizaba (*Bilimek*, 211); Nicaragua, Chontales (*Seemann*, 29); Costa Rica, without locality (*Endres*), primeval woods, Angostura (*Polakowsky*); Panama, Boquete, Veraguas (*Seemann*, 1141). Hb. Kew.

4. **Centradenia,** sp.

Guatemala (*Salvin & Godman*). Hb. Kew.

5. **Centradenia,** ? sp.

San Salvador, in shady humid places (*Bernoulli*, 2). Hb. Kew.

Tribe OSBECKIEÆ.

There are thirty genera in this tribe, eleven of which are peculiar to the Old World, and nineteen to America.

3. ACISANTHERA.

Acisanthera, P. Browne, Hist. Jam. p. 217; Benth. et Hook. Gen. Plant. i. p. 739; Triana in Trans. Linn. Soc. xxviii. p. 33.

Eleven species dispersed on the eastern side of South America, from South Brazil to Central America and the West Indies. Herbaceous, and mostly annual.

1. **Acisanthera quadrata,** Juss. in Poir. Dict. Suppl. i. p. 111; Browne, Hist. Jam. t. 22. fig. 1.

Nicaragua, Chontales (*Tate*, 443); Panama (*Duchassaing*).—Cuba, Jamaica, Porto Rico. Hb. Kew.

2. **Acisanthera recurva,** Griseb. Fl. Brit. W. Ind. p. 269.

Uranthera recurva, Naud.

Panama, in ditches near the city of Panama (*Seemann*).—Jamaica, Trinidad, Guiana, and Brazil. Hb. Kew.

4. HEERIA.

Heeria, Schl. in Linnæa, xiii. p. 432; Benth. et Hook. Gen. Plant. i. p. 740; Triana in Trans. Linn. Soc. xxviii. p. 34.

Herbs or dwarf shrubs. About six species, restricted to Mexico and Guatemala.

1. **Heeria elegans,** Schl. in Linnæa, xiii. p. 432.

South Mexico, Chinantla (*Liebmann*), Jalapa (*Linden*, 606), rocks at 4000 feet, Cordillera of Vera Cruz (*Galeotti*, 2914), Chiconquiaca (*Schiede*). Hb. Kew.

2. **Heeria macrostachya,** Triana in Trans. Linn. Soc. xxviii. p. 34.

Heeria axillare, Naud.

Heterocentrum glandulosum, Schenk in Regel's Gartenflora, 1856, t. 169.

South Mexico, without locality (*Jurgensen*, 756), Oaxaca (*Liebmann*), Orizaba (*Bourgeau*, 1868), valley of Cordova (*Bourgeau*, 1470); Guatemala, without locality (*Savage*); Costa Rica, by ditches near San José (*Polakowsky*). Hb. Kew.

3. **Heeria rosea,** Triana in Trans. Linn. Soc. xxviii. p. 34.

Heterocentrum roseum, Ill. Hort. iv. t. 97.

Heterocentrum mexicanum, Naud. Bot. Mag. t. 5166.

South Mexico, Jalapa (*Linden*, 605; *Galeotti*, 2912), region of Orizaba (*Bourgeau*, 2506; *Jurgensen*, 558). Hb. Kew.

4. **Heeria subtriplinervis,** Triana in Trans. Linn. Soc. xxviii. p. 34.

Heterocentron mexicanum, Hook. et Arn. Bot. Beech. 290, non Bot. Mag. t. 5166, nec Naud.

North Mexico, Sierra Madre (*Seemann*, 2176); South Mexico, San Blas to Tepic (*Sinclair*), Tepic (*Barclay*), Jalapa (*Coulter*). Hb. Kew.

5. **Heeria,** sp.?

Guatemala, Volcan de Fuego, 6000 feet (*Salvin & Godman*). Hb. Kew.

6. **Heeria,** sp.

Guatemala (*Skinner*). Hb. Kew.

7. **Heeria,** sp.?

South Mexico, valley of Cordova (*Bourgeau*, 1469). Hb. Kew.

5. ARTHROSTEMMA.

Arthrostemma, Ruiz et Pav. Fl. Peruv. iv. t. 326; Benth. et Hook. Gen. Plant. i. p. 740; Triana in Trans. Linn. Soc. xxviii. p. 35.

Five species, distributed from Mexico to Peru. Herbs or dwarf shrubs.

1. **Arthrostemma campanulare,** Triana in Trans. Linn. Soc. xxviii. p. 35.

Heteronoma diversifolium, Naud.

Guatemala, in humid thickets, Chojoja, near Mazatenango (*Bernoulli*); Nicaragua (*Tate*, 23); Costa Rica, a weed in gardens (*Polakowskg*); Panama, Chagres (*Fendler*, 112).—Colombia; Venezuela; Ecuador. Hb. Kew.

2. **Arthrostemma fragile,** Lindl. in Journ. Hort. Soc. iii. p. 74, with a figure, p. 75.

Heteronoma galeottianum, Naud.

South Mexico, Orizaba (*Botteri*, 746, 958), valley of Cordova (*Bourgeau*, 1508). Hb. Kew.

3. **Arthrostemma,** sp.

Guatemala (*Friedrichstal*). Hb. Kew.

[*Nepsera aquatica*, Naud. in Ann. Sc. Nat. sér. 3, xii. t. 14. fig. 1, et xiii. p. 28, is an aquatic herb, widely diffused in South America and the West Indies, and likely to be found in Central America.]

6. PTEROLEPIS.

Pterolepis, Miq. Comm. Phyt. ii. p. 72; Benth. et Hook. Gen. Plant. i. p. 742; Triana in Trans. Linn. Soc. xxviii. p. 38.

Herbs or shrubs. Twenty-five species, ranging from Mexico and the West Indies to Peru and Uruguay.

1. **Pterolepis exigua,** Triana in Trans. Linn. Soc. xxviii. p. 39.

Arthrostemma exigua, Naud.

South Mexico, rocks and fields at 3500 feet, Cordillera of Oaxaca (*Galeotti*, 2933). Hb. Kew.

2. **Pterolepis ladanoides,** Triana in Trans. Linn. Soc. xxviii. p. 39.

Arthrostemma ladanoides, DC.

Rhexia ladanoides, Rich. in Bonpl. Rhexia, t. 27.

South Mexico (*Galeotii*); Costa Rica (*Endres*, 40); Panama (*Halsted*).—Widely dispersed in the West Indies and southward to Brazil and Peru. Hb. Kew.

3. **Pterolepis œrstedii,** Triana in Trans. Linn. Soc. xxviii. p. 39.

Central America (*Œrsted*).

4. **Pterolepis,** sp.

Guatemala, near Coban (*Türckheim*, 9). Hb. Kew.

7. PTEROGASTRA.

Pterogastra, Naud. in Ann. Sc. Nat. sér. 3, xiii. p. 32; Benth. et Hook. Gen. Plant. i. p. 742; Triana in Trans. Linn. Soc. xxviii. p. 40.

Four herbaceous annual species, distributed from South Mexico to Guiana and the Orinoco.

1. **Pterogastra cupheoides,** Seem. Bot. Voy. 'Herald,' p. 122.

Heeria cupheoides, Benth. Bot. Voy. Sulph. t. 33.

South Mexico, between Galera and Pochutla (*Liebmann*); Costa Rica, roadsides near San José (*Polakowsky*); Panama, Chagres (*Fendler*, 113), Empire railway-station (*S. Hayes*, 574), about the city of Panama (*Seemann*, 69). Hb. Kew.

8. PLEROMA.

Pleroma, Don in Mem. Wern. Soc. iv. p. 293; Benth. et Hook. Gen. Plant. i. p. 473; Triana in Trans. Linn. Soc. xxviii. p. 40.

Shrubby, arboreous, or very rarely herbaceous; 104 species, finding their greatest concentration in Brazil.

1. **Pleroma bipenicillatum,** Triana in Trans. Linn. Soc. xxviii. p. 45.

Lasiandra bipenicillatum, Naud.

Panama, Santiago (*Seemann*).—Colombia and Venezuela. Hb. Kew.

2. **Pleroma galeottianum,** Triana in Trans. Linn. Soc. xxviii. p. 46.

Oreocosmus galeottianus, pro parte, quoad spec. Berland.

South Mexico, Cuesta de San Pedro Alto (*Liebmann*). Hb. Paris.

3. **Pleroma longifolium,** Triana in Trans. Linn. Soc. xxviii. p. 45.

Chætogastra lanceolata, DC. Bot. Mag. t. 2836.

South Mexico, woods on the Pacific side of the Cordillera of Oaxaca, at 6000 to 8000 feet (*Galeotti*, 2923), barren plains, Vera Cruz (*Galeotti*, 2947), Teapa (*Linden*, 643), Orizaba (*Botteri*, 1013), Yucatan and Tabasco (*Johnson*); Nicaragua, Chontales (*Tate*, 212); Costa Rica, primeval forests of Angostura (*Polakowsky*); Panama, Chagres (*Fendler*, 129; *Seemann*).—This species has a very wide area of distribution in the West Indies and southward to Brazil and Peru. Hb. Kew.

4. **Pleroma mexicanum,** Triana in Trans. Linn. Soc. xxviii. p. 46.

Melastoma mexicana, G. Don.

Rhexia tortuosa, Bonpl. Rhex. t. 7.

South Mexico, Zimapan (*Coulter*, 127), without precise locality (*Bates*), Huitamalco (*Liebmann*, 129). Hb. Kew.

5. **Pleroma naudinianum,** Triana in Trans. Linn. Soc. xxviii. p. 46.

South Mexico, Cordillera of Oaxaca (*Galeotti*, 3935); Costa Rica, in primeval woods of Carpintera, near Tres Rios (*Polakowsky*). Hb. Kew.

6. **Pleroma schiedeanum,** Triana in Trans. Linn. Soc. xxviii. p. 45.

Rhexia schiedeana, var. *micrantha,* Ch. et Schl. in Linnæa, v. p. 565.

South Mexico, Colipa (*Liebmann*), shady woods on the Cordillera of Oaxaca, near the Pacific Ocean, at 6500 to 8000 feet (*Galeotti*, 2931), without habitat (*Schiede*). Hb. Kew.

7. **Pleroma scabriusculum,** Triana in Trans. Linn. Soc. xxviii. p. 46.

Chætogastra scabriuscula, Schl.

Oreocosmus ghiesbreghtii et *O. galeottianus,* Naud. in part.

South Mexico, mountains east of Oaxaca (*Galeotti*, 2935), Oaxaca (*Ghiesbreght*). Hb. Kew.

9. ACIOTIS.

Aciotis, Don in Mem. Wern. Soc. iv. p. 300; Benth. et Hook. Gen. Plant. i. p. 744; Triana in Trans. Linn. Soc. xxviii. p. 51.

Twenty herbaceous species, ranging from Mexico through the West Indies and Central America to Peru and South Brazil.

1. **Aciotis purpurascens,** Triana in Trans. Linn. Soc. xxviii. p. 52.

Miconia purpurascens, DC.

Spennera alata, Beurl.

Panama, Chagres (*Fendler*, 149), Portobello (*Billberg*).—Common in the northern parts of South America. Hb. Kew.

2. **Aciotis rostellata,** Triana in Trans. Linn. Soc. xxviii. p. 51.

Spennera rostellata, Naud.

South Mexico, in marshes, Teapa (*Linden*, 637). Hb. Kew.

3. **Aciotis rubricaulis,** Triana in Trans. Linn. Soc. xxviii. p. 52.

Spennera rubricaulis, Mart.

Nicaragua, Chontales (*Tate*, 228).—Guiana, Brazil. Hb. Kew.

Tribe RHEXIEÆ.

There are only three genera of this tribe, which is restricted to America.

10. RHEXIA.

Rhexia, Linn. Gen. Plant. n. 468; Benth. et Hook. Gen. Plant. i. p. 747; Triana in Trans. Linn. Soc. xxviii. p. 61.

Herbs or undershrubs. Six species, inhabiting the eastern States of North America.

1. **Rhexia fragilis,** Bert. Fl. Guat. p. 16.

GUATEMALA (*Velasquez*).

2. **Rhexia glandulosa,** Bert. Fl. Guat. p. 15.

GUATEMALA (*Velasquez*).

Triana does not quote these names; and the plants doubtless belong to some other genus.

11. MONOCHÆTUM.

Monochætum, Naud. Ann. Sc. Nat. sér. 3, iv. p. 48; Benth. et Hook. Gen. Plant. i. p. 747; Triana in Trans. Linn. Soc. xxviii. p. 62.

There are twenty-four shrubby species described, distributed from North Mexico, through Central America and the States of Colombia, to Peru.

1. **Monochætum alpestre,** Naud. in Ann. Sc. Nat. sér. 3, iv. p. 50, and xiv. p. 164.

Monochætum ensiferum, Bot. Mag. t. 5132, nec Naud.

SOUTH MEXICO, woods at 8000 feet, Cordillera of Oaxaca (*Galeotti*, 2930), Pelado and Vagueria del Jacal, 10,000 feet (*Liebmann*). Hb. Kew.

2. **Monochætum bracteolatum,** Triana in Trans. Linn. Soc. xxviii. p. 64.

Monochætum humboldtianum, Seem. nec Kth.

SOUTH MEXICO, Dos Puentes (*Liebmann*); PANAMA, Boquete (*Seemann*, 1668). Hb. Kew.

3. **Monochætum calcaratum,** Triana in Trans. Linn. Soc. xxviii. p. 63.

Monochætum myrtoideum, Seem. Bot. Voy. 'Herald,' nec Naud.

NORTH MEXICO, Sierra Madre (*Seemann*, 2173); SOUTH MEXICO, Oaxaca (*Ghiesbreght*, 219), Cordillera of Guchitapec (*Berlandier*, 997). Hb. Kew.

4. **Monochætum deppeanum,** Ch. et Schl. in Linnæa, v. p. 566, sub *Arthrostemmate.*

Monochætum triplinerve, Naud.

SOUTH MEXICO, Totutla, Vera Cruz (*Linden*, 1293); rocks at 4000 feet (*Galeotti*, 2909), Dos Puentes (*Liebmann*); GUATEMALA (*Friedrichsthal*). Hb. Kew.

5. **Monochætum myrtoideum,** Naud. in Ann. Sc. Nat. sér. 3, xiv. p. 164.

SOUTH MEXICO, without any exact locality (*Bates*).—COLOMBIA. Hb. Kew.

6. **Monochætum pulchrum,** Dcne. in Revue Horticole, 1848, p. 101, fig. 6.

Monochætum pulchellum et *plumosum,* Naud.

SOUTH MEXICO, Orizaba (*Botteri*, 903; *Müller*, 906), San Cristobal (*Bourgeau*, 3238). Hb. Kew.

7. **Monochætum rivulare,** *N*aud. in Ann. Sc. Nat. sér. 3, iv. p. 50, et xiv. p. 161.

South Mexico, Orizaba (*Botteri*, 921), on the banks of streams, Cacati, Chiapas (*Linden*, 645), Chinantla (*Liebmann*); Guatemala (*Skinner*); Costa Rica (*Endres*, 120). Hb. Kew.

8. **Monochætum tenellum,** Naud. in Ann. Sc. Nat. sér. 3, xiv. p. 159; Bot. Mag. t. 5341.

Guatemala, near Pacicia (*Savage*). Hb. Kew.

9. **Monochætum ?,** sp.

South Mexico, valley of Cordova (*Bourgeau*, 1868). Hb. Kew.

10. **Monochætum ?,** sp.

Guatemala, ridge above Calderas, 8300 feet, Volcan de Fuego (*Salvin*). Hb. Kew.

Tribe MERIANEÆ.

Ten small genera are referred here; and all the species are endemic in the New World.

12. MERIANIA.

Meriania, Swartz, Fl. Ind. Occ. ii. p. 823; Benth. et Hook. Gen. Plant. i. p. 749; Triana in Trans. Linn. Soc. xxviii. p. 65.

Trees and shrubs, twenty-seven species, generally dispersed in the West Indies and Tropical South America.

1. **Meriania macrophylla,** Triana in Trans. Linn. Soc. xxviii. p. 66.

Davya macrophylla, Benth.

Guatemala (*Hartweg*); Panama (*Bridges*).—Venezuela and Colombia. Hb. Kew.

13. ADELOBOTRYS.

Adelobotrys, DC. Prodr. iii. p. 127; Benth. et Hook. Gen. Plant. i. p. 750; Triana in Trans. Linn. Soc. xxviii. p. 67.

Climbing shrubs, seven species, inhabiting the north part of South America.

1. **Adelobotrys adscendens,** Triana in Trans. Linn. Soc. xxviii. p. 67.

Davya adscendens, Griseb.

Davya guyanensis, DC. Mém. Melast. t. 111.

Sarmentaria decora, Naud.

South Mexico (*Jurgensen*, 865); Nicaragua (*Tate*, 71). Hb. Kew.

14. CENTRONIA.

Centronia, Don in Mem. Wern. Soc. iv. p. 314; Benth. et Hook. Gen. Plant. i. p. 750; Triana, Trans. Linn. Soc. xxviii. p. 71.

Nine arboreous species, natives of Central America, Guiana, Colombia, and Peru.

1. **Centronia phlomoides,** Triana in Trans. Linn. Soc. xxviii. p. 72.

Costa Rica (*Hoffmann*, *Œrsted*).

15. CALYPTRELLA.

Calyptrella, Naud. in Ann. Sc. Nat. sér. 3, xviii. p. 132; Benth. et Hook. Gen. Plant. i. p. 751; Triana, Trans. Linn. Soc. xxviii. p. 72.

Four arboreous species, inhabiting Mexico and the Andes of Peru.

1. **Calyptrella galeottii,** Naud. in Ann. Sc. Nat. sér. 3, xviii. p. 115.

South Mexico, in mountains near Oaxaca (*Galeotti*).

Tribe SONERILEÆ.

There are thirteen genera of this tribe, three of which are Asiatic, three African, and the rest American.

16. TRIOLÆNA.

Triolæna, Naud. in Ann. Sc. Nat. sér. 3, xv. p. 328; Benth. et Hook. Gen. Plant. i. p. 757; Triana in Trans. Linn. Soc. xxviii. p. 81.

Herbs; besides the following, there is one other, a native of Ecuador.

1. **Triolæna hirsuta,** Triana in Trans. Linn. Soc. xxviii. p. 67.

Bertolonia hirsuta, Benth.

Panama, in wet, shady woods, Frijoli railway-station (*Hayes*, 494).—Peru. Hb. Kew.

2. **Triolæna scorpioides,** Naud. in Ann. Sc. Nat. sér. 3, xv. p. 328, and xvi. t. 18. fig. 5; Hort. Lind. t. 8.

South Mexico, wet places, Zacualpan, Chiapas (*Linden*, 647); Hacienda de Java (*Liebmann*). Hb. Kew.

3. **Triolæna,** sp. (?*Triolænæ scorpioidei* var.).

Guatemala, Coban (*Salvin & Godman*). Hb. Kew.

Tribe MICONIEÆ.

A large tribe peculiar to America, comprising thirty genera and about 700 species.

17. OXYMERIS.

Oxymeris, DC. Prodr. iii. p. 190; Benth. et Hook. Gen. Plant. i. p. 761; Triana in Trans. Linn. Soc. xxviii. p. 90.

Eighty-nine species of shrubs and small trees, distributed from Mexico to Peru and South Brazil, most numerous in Brazil.

1. **Oxymeris cinnamomea,** Triana in Trans. Linn. Soc. xxviii. p. 93.

Miconia cinnamomea, Beurl. in Vetensk. Akad. Hand. 1854, p. 131.

Panama, mountains near Portobello (*Billberg*).

2. **Oxymeris cornioides,** Triana in Trans. Linn. Soc. xxviii. p. 93.

Cremanium aschenbornianum, Schauer.

South Mexico, Jalapa (*Galeotti*, 2921; *Linden*, 597); Itzhuatlancillo, Orizaba (*Bourgeau*, 2427), without localities (*Aschenborn & Sumichrast*). Hb. Kew.

3. **Oxymeris heterobasis,** Triana in Trans. Linn. Soc. xxviii. p. 95.
Clidemiastrum mexicanum, Naud.
Clidemia lugubris, Beurl.

South Mexico, marshes and wet places, Teapa (*Linden*, 636), without locality (*Jurgensen*), Jocotepec (*Liebmann*, 45); Panama, Portobello (*Billberg*).—North Brazil. Hb. Kew.

4. **Oxymeris melanodesma,** Triana in Trans. Linn. Soc. xxviii. p. 92.
Clidemia melanodesma, Naud.

South Mexico, Orizaba (*Botteri*, 969), Vera Cruz to Orizaba (*Müller*, 82).—Colombia. Hb. Kew.

5. **Oxymeris multiplinervis,** Triana in Trans. Linn. Soc. xxviii. p. 94.
Clidemia multiplinervis, Naud.

South Mexico, near Zacualpan (*Linden*).

6. **Oxymeris secunda,** Triana in Trans. Linn. Soc. xxviii. p. 95.
Clidemia secunda, Don.

Costa Rica, in virgin forests of Angostura (*Polakowsky*).—Peru.

7. **Oxymeris subseriata,** Triana in Trans. Linn. Soc. xxviii. p. 92, var. *sagittata.*
Clidemia sagittata, Naud.

South Mexico, Oaxaca (*Ghiesbreght*, 56).

18. CONOSTEGIA.

Conostegia, Don in Mem. Wern. Soc. iv. p. 316; Benth. et Hook. Gen. Plant. i. p. 763; Triana in Trans. Linn. Soc. xxviii. p. 97.

Twenty-three species of shrubs and small trees, inhabiting Mexico, Central America, and the north part of South America.

1. **Conostegia arborea,** Schl. in Linnæa, xiii. p. 424, sub *Melastomate.*
Conostegia arborea, Schauer in Linnæa, xx. p. 733.

South Mexico, near Jalapa, 4000 feet, most rare species (*Galeotti*, 2917; *Linden*, 602); without locality (*Aschenborn*). Hb. Kew.

2. **Conostegia bracteata,** Triana in Seem. Journ. Bot. iv. p. 209.

Nicaragua, Chontales (*Seemann*). Hb. Kew.

3. **Conostegia lasiopoda,** Benth. Bot. Voy. Sulph. p. 96.

Central America (*Barclay*).

4. **Conostegia macrantha,** Berg, ex Triana in Trans. Linn. Soc. xxviii. p. 97.

Costa Rica, Candelaria Mts. (*Ærsted*).

5. **Conostegia ærstediana,** Berg, ex Triana in Trans. Linn. Soc. xxviii. p. 98.

Costa Rica, Volcan de Barba, Volcan de Turrialba, Naranjo (*Ærsted*).

6. **Conostegia speciosa,** Naud. in Ann. Sc. Nat. sér. 3, xvi. p. 109.

PANAMA (*Hayes*, 86; *Seemann & Cuming*).—VENEZUELA, COLOMBIA. Hb. Kew.

7. **Conostegia sphærica,** Triana in Trans. Linn. Soc. xxviii. p. 98.

SOUTH MEXICO, Teotalcingo (*Liebmann*). Hb. Kew.

8. **Conostegia subcrustulata,** Triana in Trans. Linn. Soc. xxviii. p. 98.

Conostegia purpurea, Griseb.

PANAMA, on the banks of the river Chagres (*Duchassaing*).

9. **Conostegia subhirsuta,** DC. Prodr. iii. p. 174.

SOUTH MEXICO, Jalapa (*Galeotti*, 2916; *Linden*, 610), Tlapocoya, Mirador (*Liebmann*), Huatusco (*Ghiesbreght*).—COLOMBIA, and common in the WEST INDIES. Hb. Kew.

10. **Conostegia superba,** Don in Mem. Wern. Soc. iv. p. 317.

Conostegia macrophylla, Naud.

SOUTH MEXICO, Lacoba and Hacienda de Java (*Liebmann*). Hb. Kew.

11. **Conostegia xalapensis,** Don in Mem. Wern. Soc. iv. p. 317.

Melastoma xalapensis, Bonpl. Melast. t. 54.

SOUTH MEXICO, region of Orizaba (*Bourgeau*, 2452; *Bilimek*, 154), valley of Misantla (*Hahn*), Jalapa (*Galeotti*, 2920), Mirador (*Liebmann*), between Tehuantepec and the river Coazacualcos (*Andrieux*, 375), Yucatan and Tabasco (*Johnson*); HONDURAS (*Armstrong*); NICARAGUA (*Tate*); COSTA RICA, on roadsides near Alajuela (*Polakowsky*); PANAMA, Chagres (*Fendler*, 30), Boquete (*Seemann*).—Southward to PERU and in CUBA. Hb. Kew.

19. MICONIA.

Miconia, Ruiz et Pav. Prodr. p. 60; Benth. et Hook. Gen. Plant. i. p. 763; Triana in Trans. Linn. Soc. xxviii. p. 100.

This is the largest genus of the family, comprising upwards of 350 species, generally diffused from Mexico to Peru and South Brazil, including the West Indies; most numerous on the eastern side. Shrubs and trees.

1. **Miconia albicans,** Triana in Trans. Linn. Soc. xxviii. p. 116.

Miconia holosericea, DC.

Melastoma albicans, Sw.

Melastoma holosericea, Vahl, Bonpl. Melast. t. 23 et 24.

A very distinct and widely spread species in TROPICAL AMERICA and the WEST INDIES to—PANAMA, Veraguas (*Seemann*); SOUTH MEXICO, Trapiche de la Concepcion (*Liebmann*), without locality (*Sallé*). Hb. Kew.

2. **Miconia alternans,** Naud. in Ann. Sc. Nat. sér. 3, xvi. p. 161.

Miconia pteropoda, Naud. nec Benth.

PANAMA, in a wet ravine close to the railway (*S. Hayes*).—GUIANA. Hb. Kew.

3. **Miconia anisotricha,** Triana in Trans. Linn. Soc. xxviii. p. 102.

Clidemia anisotricha, Schl.

Cremanium berghesianum, Schauer.

South Mexico, Chinantla (*Liebmann*), Cordillera of Vera Cruz, on lava at 6000 feet (*Galeotti,* 2919), between San Miguel del Soldado and Joya (*Schiede*), without locality (*Aschenborn*). Hb. Kew.

4. **Miconia argentea,** DC. Prodr. iii. p. 182; Triana in Trans. Linn. Soc. xxviii. p. 114.

Miconia procera, Naud.

Miconia longistyla, Seem.

Cremanium compressum, Benth.

Panama, Chagres (*Fendler*, 28), Tolé (*Seemann*, 1146), Veraguas (*Hinds*).—Colombia, Trinidad. Hb. Kew.

5. **Miconia barbinervis,** Triana in Trans. Linn. Soc. xxviii. p. 113.

Clidemia chrysopogon, Beurl.

Panama, mountains near Portobello (*Billberg*).—Southward to Peru.

6. **Miconia beurlingii,** Triana in Trans. Linn. Soc. xxviii. p. 107.

Miconia pusilliflora, Beurl. nec Naud.

Panama, mountains near Portobello (*Billberg*).—Trinidad.

7. **Miconia caudata,** Triana in Trans. Linn. Soc. xxviii. p. 104.

Chitonia caudata, Don.

Melastoma caudata, Bonpl. Melast. t. 7.

Panama, Boquete (*Seemann*, 1667).—Southward to Peru. Hb. Kew.

8. **Miconia chrysoneura,** Triana in Trans. Linn. Soc. xxviii. p. 111.

Mexico (*Hahn*). Hb. Kew.

9. **Miconia decussata,** Don, ex Steud.; Triana in Trans. Linn. Soc. xxviii. p. 121.

iconia barbigera, congestiflora et *pileata,* DC.

South Mexico, Tepicapa (*Liebmann*); Panama, without locality (*Seemann*).—West Indies to Peru and Brazil. Hb. Kew.

10. **Miconia desmantha,** Benth. Pl. Hartw. p. 181; Triana in Trans. Linn. Soc. xxviii. p. 110.

Miconia chætodon, lindenii et *æruginosa,* Naud.

South Mexico, forest of Tuspango, near Cordova (*Bourgeau*); Costa Rica, in hedges about San José (*Polakowsky*).—Venezuela to Peru. Hb. Kew.

11. **Miconia erythrantha,** Naud. in Ann. Sc. Nat. sér. 3, xvi. p. 213.

South Mexico, pine-woods at 7500 to 8000 feet, Cordillera of Oaxaca (*Galeotti*, 2907), Lachopa (*Liebmann*). Hb. Kew.

12. **Miconia fothergilla,** Naud. in Ann. Sc. Nat. sér. 3, xvi. p. 119.

Melastoma fothergilla, Bonpl. Melast. t. 32.

South Mexico (*Jurgensen*, 757).—A very common species in the West Indies and almost all over Tropical South America.

13. **Miconia glaberrima,** Schl. in Linnæa, xiii. p. 421; Triana in Trans. Linn. Soc. xxviii. p. 129.

Miconia myriocarpa et *brachystyla,* Naud.

South Mexico, Trapiche de la Concepcion (*Liebmann*), Tlaspango (*Hahn*), Chiapas (*Linden*, 649), Cordillera of Oaxaca, woods at 3800 feet (*Galeotti*, 2927), Barranca de Tioselo, between Tioselo and Jicochimalco (*Schiede*); Guatemala, near Coban, 4600 feet (*Türckheim*, 399). Hb. Kew.

14. **Miconia globulifera,** Naud. in Ann. Sc. Nat. sér. 3, xvi. p. 139.

South Mexico, Jalapa (*Linden*, 601; *Galeotti*, 2924), Amatlan and Huatusco (*Liebmann*). Hb. Kew.

15. **Miconia gracilis,** Triana in Trans. Linn. Soc. xxviii. p. 107.

Nicaragua, Chontales (*Seemann*, 38; *Tate*, 323).—Colombia. Hb. Kew.

16. **Miconia granulosa,** Naud. in Ann. Sc. Nat. sér. 3, xvi. p. 218.

Melastoma granulosa, Bonpl. Melast. t. 12.

Guatemala, Esquintla (*Velasquez*).—Colombia.

17. **Miconia hemenostigma,** Naud. in Ann. Sc. Nat. sér. 3, xvi. p. 230.

South Mexico, Lachopa (*Liebmann*; *Jurgensen*, 361), in pine-forests near Oaxaca (*Galeotti*, 2908). Hb. Kew.

18. **Miconia hyperprasina,** Naud. in Ann. Sc. Nat. sér. 3, xvi. p. 186.

South Mexico, Teapa (*Linden*, 640).—Colombia.

19. **Miconia ibaguensis,** Triana in Trans. Linn. Soc. xxviii. p. 111.

Melastoma ibaguensis, Bonpl. Melast. t. 45.

Melastoma? *lineata,* Schl.

South Mexico, Mirador (*Linden*, 612; *Liebmann*), valley of Cordova (*Bourgeau*, 1902), savannas at 3000 feet, Cordillera of Vera Cruz (*Galeotti*, 2926), without locality (*Jurgensen*, 755 and 904); Panama (*Seemann*, 390; *Duchassaing*).—Nearly all over the West Indies and Tropical America. Hb. Kew.

20. **Miconia impetiolaris,** Don in Mem. Wern. Soc. iv. p. 316.

Melastoma impetiolaris, Bonpl. Melast. t. 29.

South Mexico, forest of Chiquihuitl near Potrero (*Bourgeau*, 2126), Pital, Colipa (*Liebmann*); Guatemala (*Friedrichsthal*); Panama, Chagres (*Fendler*, 29), in shady places (*Seemann*, 393; *S. Hayes*).—West Indies and Colombia to Brazil. Hb. Kew.

21. **Miconia lacera,** Naud. in Ann. Sc. Nat. sér. 3, xvi. p. 152.

Melastoma lacera, Bonpl. Melast. t. 5.

South Mexico (*Jurgensen*, 753; *Liebmann*, 49); Panama, Chagres (*Fendler*, 33), islands, Bay of Panama (*Barclay*), woods near the city of Panama (*S. Hayes*, 697).—West Indies and Guiana to Colombia and Peru. Hb. Kew.

22. **Miconia lævigata,** DC. Prodr. iii. p. 188; Triana in Trans. Linn. Soc. xxviii. p. 106.

Melastoma lævigata, Linn., Sloane's Hist. Jamaica, ii. t. 197.
Melastoma pendulifolia, Bonpl. Melast. t. 35.
Miconia sylvatica, Schl.

South Mexico, Mirador (*Linden*, 1291), Jalapa, at 4000 feet (*Galeotti*, 2910 and 2923), Jicaltepec (*Liebmann*), valley of Cordova (*Bourgeau*, 2248).—A very widely spread species in Tropical America and the West Indies. Hb. Kew.

23. **Miconia lonchophylla,** Naud. in Ann. Sc. Nat. sér. 3, xvi. p. 176.

Panama, Chagres (*Fendler*, 31 and 39).—Colombia and Venezuela. Hb. Kew.

24. **Miconia magnifica,** Triana in Trans. Linn. Soc. xxviii. p. 131.

Cyanophyllum magnificum, Hortul.

Mexico.

25. **Miconia maximiliana,** DC. Prodr. iii. p. 186; Triana in Trans. Linn. Soc. xxviii. p. 109.

Miconia ibaguensis, Schl., nec Triana.

Mexico.—Brazil.

26. **Miconia mexicana,** Naud. in Ann. Sc. Nat. sér. 3, xvi. p. 244.

Melastoma mexicana, Bonpl. Melast. t. 55.

South Mexico, Jalapa (*Galeotti*, 2922; *Coulter*, 129; *Linden*, 599), Perote (*Hahn*), San Cristobal (*Bourgeau*, 2613), Mirador (*Liebmann*). Hb. Kew.

27. **Miconia minutiflora,** DC. Prodr. iii. p. 189; Triana in Trans. Linn. Soc. xxviii. p. 118.

Melastoma minutiflora, Bonpl. Melast. t. 22.
Miconia myriantha, Benth.
Miconia melanodendron, Naud.

South Mexico, valley of Cordova (*Bourgeau*, 1801), Lachopa (*Liebmann*, 74); Guatemala, in thickets, Yzabal (*Bernoulli*); Panama, open grassy places, Rio Grande railway-station (*S. Hayes*, 178), about the city of Panama (*Seemann*).—Common in the West Indies and throughout Tropical America. Hb. Kew.

28. **Miconia nervosa,** Triana in Trans. Linn. Soc. xxviii. p. 111.

Clidemia spicata, Don.
Tschudya sphondylantha, Griseb.

South Mexico, without special locality (*Sallé*); Panama, Chagres (*Fendler*, 35), in dense woods, Lion-Hill railway-station (*S. Hayes*, 700).—West Indies to Guiana, Brazil, and Peru. Hb. Kew.

29. **Miconia oligotricha,** Naud. Monogr. p. 245; Triana in Trans. Linn. Soc. xxviii. p. 129.

Cremanium oligotrichum, DC.
Melastoma glaucocarpum, Schl.

South Mexico, Jalapa (*Linden*, 1290), Sierra Colorada, Cumbre del Obispo (*Schiede*). Hb. Kew.

30. **Miconia phæotricha,** Naud. in Ann. Sc. Nat. sér. 3, xvi. p. 193.
South Mexico, in the mountains near Oaxaca (*Galeotti*, 2951).

31. **Miconia pinetorum,** Naud. in Ann. Sc. Nat. sér. 3, xvi. p. 229.
South Mexico, pine-woods at 5000 to 7500 feet, Cordillera of Oaxaca (*Galeotti*, 2906 and 2928). Hb. Kew.

32. **Miconia planinervia,** Naud. in Ann. Sc. Nat. sér. 3, xvi. p. 160.
Panama?—Venezuela.

33. **Miconia prasina,** DC. Prodr. iii. p. 188; Triana in Trans. Linn. Soc. xxviii. p. 109.
Miconia pteropoda, Benth.
Miconia microphylla, Steud.
Miconia sepiaria, attenuata et *collina,* DC.
South Mexico, La Loja and Polanque (*Liebmann*, 24, 26); Panama, Chagres (*Fendler*, 32), Isle of Taboga (*Seemann*, 1665), Veraguas (*Seemann*, 1144).—An exceedingly common species in most parts of Tropical America and the West Indies. Hb. Kew.

34. **Miconia rubiginosa,** DC. Prodr. iii. p. 183; Triana in Trans. Linn. Soc. xxviii. p. 112.
Melastoma rubiginosa, Bonpl. Melast. t. 47.
Miconia astrolasia, DC.
Panama, Isle of Taboga (*Seemann*, 1664), in meadows near the city of Panama (*Seemann*), Veraguas (*Seemann*).—Ranging wide in Equatorial America. Hb. Kew.

35. **Miconia schlimii,** Triana in Trans. Linn. Soc. xxviii. p. 102.
Guatemala (*Friedrichsthal*).—Colombia.

36. **Miconia scorpioides,** Schl. in Linnæa, v. p. 564; Triana in Trans. Linn. Soc. xxviii. p. 114.
Miconia anceps, Naud.
South Mexico, Cuesta Grande de Chiconquiaco (*Schiede*); Costa Rica (*Œrsted*).—Southward to Peru.

37. **Miconia stenostachya,** DC. Prodr. iii. p. 181; Triana in Trans. Linn. Soc. xxviii. p. 116.
Miconia argyrophylla, Naud. nec DC.
Miconia hypargyrea, Miq.
South Mexico (*Jurgensen*, 864 and 905); Panama, Tolé, Veraguas (*Seemann*, 1147).—This species has a very wide range in the West Indies and Tropical America. Hb Kew.

38. **Miconia triplinervis,** Ruiz et Pav. Syst. p. 109; Triana in Trans. Linn. Soc. xxviii. p. 110.

Miconia hexaptera, Naud.

South Mexico, without locality (*Linden*).—Jamaica; Peru.

39. **Miconia umbrifera,** Naud. in Ann. Sc. Nat. sér. 3, xvi. p. 116.

Pogonorhynchus amplexans, Crueger.

Panama, Lion-Hill railway-station (*S. Hayes*).—Trinidad; Peru. Hb. Kew.

40. **Miconia umbilicata,** Bertol. Fl. Guat. p. 17.

Guatemala (*Velasquez*).

41. **Miconia,** ? sp.

Costa Rica (*Endres*, 137). Hb. Kew.

42. **Miconia,** ? sp.

Costa Rica, a small tree at 5000 feet altitude (*Endres*, 121). Hb. Kew.

43. **Miconia,** ? sp.

Guatemala, Volcan de Fuego, ridge above Calderas, 8500 feet (*Salvin*). Hb. Kew.

44. **Miconia,** sp.

South Mexico, region of Orizaba (*Bourgeau*, 2427). Hb. Kew.

45. **Miconia,** sp.

North Mexico, Sierra Madre (*Seemann*, 2172). Hb. Kew.

46. **Miconia,** sp.

Guatemala, Yzabal (*Bernoulli*, 872). Hb. Kew.

47. **Miconia,** sp.

Guatemala, Yzabal (*Bernoulli*, 876). Hb. Kew.

48. **Miconia,** sp.

Guatemala, Mazatenango (*Bernoulli*, 874). Hb. Kew.

49. **Miconia,** sp.

Costa Rica (*Endres*, 152). Hb. Kew.

50. **Miconia,** sp. (*M. prasina*, Seem., nec DC.).

Panama, Boquete, Veraguas (*Seemann*, 1666). Hb. Kew.

20. TOCOCA.

Tococa, Aubl. Pl. Guian. i. p. 437, t. 174; Benth. et Hook. Gen. Plant. i. p. 764; Triana in Trans. Linn. Soc. xxviii. p. 131.

Triana enumerates twenty-seven species, all inhabiting South America.

1. **Tococa coriacea,** S. Moore, in Trimen's Journ. Bot. 1880, p. 3.

Brit. Honduras, Belize (*Barlee*). Hb. Kew.

21. HETEROTRICHUM.

Heterotrichum, DC. Prodr. iii. p. 173; Benth. et Hook. Gen. Plant. i. p. 765; Triana in Trans. Linn. Soc. xxviii. p. 134.

Seven shrubby species, ranging from Mexico to the north part of South America and the West Indies.

1. **Heterotrichum octonum**, DC. Prodr. iii. p. 173; Triana in Trans. Linn. Soc. xxviii. p. 134.

Melastoma octonum, Bonpl. Melast. t. 4.
Staphidium octonum, Naud.
Stephanotrichum octonum, Naud.

South Mexico, copses about Teapa (*Linden*, 635), woods of Chinantla (*Galeotti*, 2942); Nicaragua (*Tate*, 74).—Southward to Peru. Hb. Kew.

22. CLIDEMIA.

Clidemia, Don in Mem. Wern. Soc. iv. p. 306; Benth. et Hook. Gen. Plant. i. p. 766; Triana in Trans. Linn. Soc. xxviii. p. 134.

About twenty shrubby species, ranging from Mexico to South Brazil and Peru.

1. **Clidemia chinantlana**, Triana in Trans. Linn. Soc. xxviii. p. 135.

Staphidium chinantlana, Naud.

South Mexico, near Chinantla (*Galeotti*, 2945). Hb. Kew.

2. **Clidemia dentata**, Don in Mem. Wern. Soc. iv. p. 308.

Staphidium purpureum, Naud.

Panama, Chagres (*Fendler*, 37), island of Tumaca (*Barclay*).—Southward to Peru. Hb. Kew.

3. **Clidemia dependens**, Don in Mem. Wern. Soc. iv. p. 307; Triana in Trans. Linn. Soc. xxviii. p. 136.

Melastoma capitellata, Bonpl. Melast. t. 3.
Staphidium spicatum, *confertiflorum* et *bracteosum*, Naud.

South Mexico (*Jurgensen*, 752); Brit. Honduras, Belize (*Marsh*); Panama, in meadows near the city of Panama (*Seemann*, 72).—Common in Equatorial America, and occurring in the West Indies. Hb. Kew.

4. **Clidemia hirta**, Don in Mem. Wern. Soc. iv. p. 309; Triana in Trans. Linn. Soc. xxviii. p. 135.

Clidemia elegans, Don.
Staphidium pauciflorum et *chrysanthum*, Naud.

South Mexico, valley of Cordova (*Bourgeau*, 1682), Jicaltepec and Misantla (*Liebmann*), Orizaba (*Botteri*, 902), humid places, Tabasco (*Linden*, 642); Nicaragua, Chontales (*Seemann*, 40).—A very common and widely spread species in South America. Hb. Kew.

5. **Clidemia laxiflora**, Schl. in Linnæa, xiii. p. 426; Triana in Trans. Linn. Soc. xxviii. p. 135.

Staphidium galeotti, Naud.

South Mexico, woods at 3000 feet, Cordillera of Vera Cruz (*Galeotti*, 2918), Mirador (*Linden*, 608; *Liebmann*, 59), valley of Cordova (*Bourgeau*, 1579), Hacienda de la Laguna (*Schiede*). Hb. Kew.

6. **Clidemia melanotricha,** Triana in Trans. Linn. Soc. xxviii. p. 136.

Costa Rica (*Hoffmann*). Hb. Berol.

7. **Clidemia neglecta,** Don in Mem. Wern. Soc. iv. p. 307; Triana in Trans. Linn. Soc. xxviii. p. 136.

Clidemia fenestrata, Seem., nec Benth.
Clidemia urceolata, DC.
Staphidium urceolatum, Naud.

Panama, Chagres (*Fendler*, 34 and 36), Isle of Taboga (*Seemann*, 1663).—Southward to Brazil and Peru, and in Trinidad. Hb. Kew.

8. **Clidemia petiolaris,** Schl. in Linnæa, v. p. 562, sub *Melastomate*; Triana in Trans. Linn. Soc. xxviii. p. 135.

Clidemia deppeana, Naud.
Staphidium lindenianum, gracile et *dependens,* Naud.

South Mexico, Yucatan and Tabasco (*Johnson*, 130), borders of streams, Teapa (*Linden*, 639), Hacienda de Tuspango (*Bourgeau*, 2442, in part), Huitamalco (*Liebmann*); Panama, mountains near Portobello (*Billberg*). Hb. Kew.

9. **Clidemia serrulata,** Schl. in Linnæa, xiii. p. 425.

Staphidium divaricatum, Naud.

South Mexico, humid places, Teapa (*Linden*, 634), Hacienda de Tuspango (*Bourgeau*, 2442 in part). Hb. Kew.

10. **Clidemia,** sp.

South Mexico, woods at 4800 feet in the Cordillera of Oaxaca (*Galeotti*, 2934). Hb. Kew.

23. SAGRÆA.

Sagræa, DC. Prodr. iii. p. 170; Benth. et Hook. Gen. Plant. i. p. 766; Triana in Trans. Linn. Soc. xxviii. p. 137.

About thirty-five shrubby species, inhabiting the West Indies and northern part of South America, one extending to Mexico.

1. **Sagræa petiolata,** Triana in Trans. Linn. Soc. xxviii. p. 139.

Clidemia petiolata, DC.

Panama, Chagres (*Fendler*, 38).—Guiana. Hb. Kew.

2. **Sagræa rubra,** Triana in Trans. Linn. Soc. xxviii. p. 137.

Melastoma rubra, Bonpl. t. 39.
Staphidiastrum rubrum, Naud.
Sagræa sessiliflora et *columneæfolia,* DC.

South Mexico, Acapulco (*Hinds*), Chinantla at 3000 feet (*Galeotti*, 2943); Panama, in meadows near the city of Panama (*Seemann*, 395).—A common species in the West Indies and Tropical South America. Hb. Kew.

24. CALOPHYSA.

Calophysa, DC. Prodr. iii. p. 166; Benth. et Hook. Gen. Plant. i. p. 766; Triana in Trans. Linn. Soc. xxviii. p. 140.

Ten shrubby species, dispersed from Mexico to Guiana, Colombia, and Peru.

1. **Calophysa setosa,** Triana in Seemann's Journ. Bot. v. p. 209.

Nicaragua, Chontales (*Seemann*); South Mexico, Misantla (*Hahn*), Lacoba &c. (*Liebmann*). Hb. Kew.

2. **Calophysa vesiculosa,** Triana in Trans. Linn. Soc. xxviii. p. 140.

Tococa vesiculosa, DC., Calques des Dess. Fl. Mex. 336.

South Mexico (*Moçino & Sessé*).

25. BELLUCIA.

Bellucia, Neck. Elem. ii. p. 142; Benth. et Hook. Gen. Plant. i. p. 768; Triana in Trans. Linn. Soc. xxviii. p. 141.

Six species of shrubs and trees, inhabiting Mexico and the north part of South America.

1. **Bellucia macrophylla,** Triana in Trans. Linn. Soc. xxviii. p. 142.

Bellucia superba, Naud.
Bellucia aubletii, Seem., nec Naud.
Blakea macrophylla, Don.

South Mexico, El Azufre, near Teapa (*Linden*, 64). Hb. Kew.

26. HENRIETTELLA.

Henriettella, Naud. in Ann. Sc. Nat. sér. 3, xviii. p. 107; Benth. et Hook. Gen. Plant. i. p. 769; Triana in Trans. Linn. Soc. xxviii. p. 143.

Shrubs and trees, fourteen species, inhabiting the West Indies and north part of South America.

1. **Henriettella seemannii,** Naud. in Ann. Sc. Nat. sér. 3, xviii. p. 108.

Sagræa scabrosa, Seem., nec Naud.

Panama, near Cruces (*Seemann*, 388). Hb. Kew.

27. OCTOPLEURA.

Octopleura, Griseb. Fl. Brit. W. Ind. p. 260; Benth. et Hook. Gen. Plant. i. p. 769; Triana in Trans. Linn. Soc. xxviii. p. 145.

Seven shrubby species, found in the West Indies and north part of South America.

1. **Octopleura diversifolia,** Triana in Trans. Linn. Soc. xxviii. p. 145.

Melastoma diversifolia, Bonpl. Melast. t. 59.
Staphidium diversifolium, Naud.

Panama, near Cruces (*Seemann*, 389).—Colombia. Hb. Kew.

2. **Octopleura micrantha,** Griseb. Fl. Brit. W. Ind. p. 260.

Melastoma micranthum, Sw.

COSTA RICA, primeval woods of Carpintera (*Polakowsky*).—JAMAICA; VENEZUELA; COLOMBIA.

3. **Octopleura quinquenervia,** Triana in Trans. Linn. Soc. xxviii. p. 145.

Melastoma quinquenervia, Mill. Dict.
Clidemia cyanocarpa, Benth.
Clidemia ? decurrens, Beurl.

PANAMA, in woods on the road to the city of Panama (*Billberg*).—COLOMBIA.

Tribe BLAKEÆ.

Limited to the two following genera, both of which are restricted to America.

28. BLAKEA.

Blakea, Linn. Gen. Plant. n. 593; Benth. et Hook. Gen. Plant. i. p. 770; Triana in Trans. Linn. Soc. xxviii. p. 148.

About twenty shrubby species, inhabiting the West Indies and Central America to Peru.

1. **Blakea gracilis,** Hemsley, Diag. Pl. Nov. pars 1, p. 13. (Tab. XXIII.)

Fruticosa, glabra, ramulis teretibus gracilibus, foliis longe petiolatis vix coriaceis 5-nerviis obovato-ellipticis abrupte acuminatis, floribus mediocribus solitariis axillaribus longe pedunculatis, bracteis a basi liberis, 2 exterioribus majoribus foliis similibus, 2 interioribus obovato-spathulatis.

Frutex erectus, elatus, glaber, ramulis ultimis teretibus, gracilibus. *Folia* longe petiolata, vix coriacea, 5-nervia, obovato-elliptica, 2½–3-pollicaria, abrupte acuminata, subacuta, venis transversis creberrimis, petiolo gracili, 6–8 lin. longi. *Flores* albido-rosei, ad sesquipoll. diametro, axillares, solitarii, pedunculati, 4-bracteati; pedunculi 1½–2-pollicares; bracteæ a basi liberæ, decussatæ, 2 exteriores majores fere pollicares foliis simillimæ, interiores obovato-spathulatæ; calycis limbus fere obsoletus, truncatus vel obscure 6-lobus; petala 6, obliqua; stamina 12, æqualia; filamenta crassa; antheræ magnæ, oblongæ, filamentis æquilongæ, apice biporosæ, connectivo inappendiculato; ovarium vertice depressum, stylo elongato, arcuato, stigmate parvo.

COSTA RICA, without locality (*Endres*). Hb. Kew.

In habit and foliage this species closely resembles *B. granatensis*, but differs in its bracts and other characters.

2. **Blakea grandiflora,** Hemsley, Diag. Pl. Nov. pars 1, p. 13.

Glaberrima, ramulis crassissimis, foliis longe petiolatis late ellipticis breviter acuminatis obtusis, floribus maximis pedunculatis axillaribus solitariis vel 2–4 fasciculatis 4-bracteatis, bracteis exterioribus ovatis basi connatis, interioribus omnino connatis, calycis limbo longe producto 4-lobo, petalis orbiculari-obovatis.

Arbor (?) glaberrima, ramulis præcipue ad nodos crassissimis. *Folia* longe petiolata, coriacea, late elliptica, 4–6-pollicaria, breviter et obtuse acuminata, basi cuneata, 5-nervia, nervis lateralibus margine contiguis, venis transversis satis crebris, petiolo crassiusculo, 1–1½-pollicari. *Flores* albi, pedunculati, axillares, solitarii vel 2–4 fasciculati, 4-bracteati, ad 3 poll. diametro, pedunculi crassi, 1–1½ poll. longi; bracteæ exteriores pollicares, ovati-orbiculatæ, obtusæ,

5-nerves, basi tantum connatæ, interiores omnino connatæ cupulam formantes, calycis tubum includentes; calyx turbinatus, limbo alte producto, 6-lobo, lobis latis, apice subito coarctatis et retroflexis; petala 6, orbiculari-rotundata; stamina 12; filamenta crassa, connectivo inappendiculato (?); ovarium 6-loculare, stylo elongato recto, stigmate parvo.

COSTA RICA, without locality (*Endres*, 230). Hb. Kew.

3. **Blakea,** sp.

COSTA RICA, at an elevation of 5500 feet (*Endres*, 122). Hb. Kew.

4. **Blakea,** sp.

GUATEMALA, Volcan de Fuego (*Salvin & Godman*). Hb. Kew.

29. TOPOBEA.

Topobea, Aubl. Pl. Guian. i. p. 476; Benth. et Hook. Gen. Plant. i. p. 770; Triana in Trans. Linn. Soc. xxviii. p. 149.

Fourteen shrubby species, inhabiting Mexico and the north part of South America.

1. **Topobea calycularis,** Naud. in Ann. Sc. Nat. sér. 3, xviii. p. 149.

SOUTH MEXICO, humid forests of Zuluzu, Chiapas (*Linden*, 650). Hb. Kew.

2. **Topobea lævigata,** Naud. in Ann. Sc. Nat. sér. 3, xviii. p. 150.

Topobea fragrans, Naud.
Blakea lævigata, Don.

SOUTH MEXICO, Mirador (*Liebmann*, 93; *Linden*, 611). Hb. Kew.

3. **Topobea superba,** Naud. Ann. Sc. Nat. sér. 3, xviii. p. 147.

PANAMA, Aspinwall (*S. Hayes*, 161), Pueblo Nuevo de los Remedios (*Seemann*, 1143). Hb. Kew.

4. **Topobea,** sp.

NICARAGUA, Chontales (*Tate*, 385). Hb. Kew.

Tribe MOURIRIEÆ.

This tribe comprises the following genus and one other, *Memecylon*, of which there are nearly 100 species, widely spread in Asia, Africa, and Australia.

30. MOURIRIA.

Mouriria, Juss. Gen. Plant. p. 320; Benth. et Hook. Gen. Plant. i. p. 772; Triana in Trans. Linn. Soc. xxviii. p. 153.

Thirty species of small trees and shrubs, natives of the West Indies and the northern part of South America.

1. **Mouriria mexicana,** DC. Prodr. iii. p. 8; Calques des Dess. Fl. Mex. 361.

MEXICO.

2. **Mouriria parvifolia,** Benth. Bot. Voy. Sulph. p. 97, t. 36.

Mouriria acuta, Griseb.

COSTA RICA (*Endres*, 261); PANAMA, Lion-Hill railway-station and Rio Grande station (*S. Hayes*, 365, 474).—CUBA. Hb. Kew.

MELASTOMACEÆ DUBIEÆ.

1. **Melastoma umbilicata,** Bert. Fl. Guat. p. 16.
GUATEMALA, Esquintla (*Velasquez*).

2. **Melastoma rostrata,** Bert. Fl. Guat. p. 17.
GUATEMALA, Antigua (*Velasquez*).

Order LVI. LYTHRACEÆ.

Lythraceæ, Benth. et Hook. Gen. Plant. i. p. 773; Koehne, Fl. Bras. fasc. lxxiii.

About 250 species of herbs, shrubs, and trees, belonging to thirty genera. The woody species are mostly natives of tropical and subtropical regions, and the herbaceous species generally dispersed, a few of them having a very wide range of distribution in temperate regions.

Tribe AMMANNIEÆ.

Dwarf herbs, often aquatic.

1. ROTALA.

Rotala, Linn. Mant. p. 175; Benth. et Hook. Gen. Plant. i. p. 776, sub *Ammannia*; Koehne, Fl. Bras. fasc. lxxiii. p. 191.

Several herbaceous species, diffused nearly all over the tropics. Aquatic or marsh plants.

1. **Rotala mexicana,** Ch. et Schl. in Linnæa, v. p. 567.

Koehne (*l. c.*) unites under this name several varieties, widely spread in Tropical Asia, Africa, and America (see t. 39).

"Planta nobis ex descriptione auctorum verisimiliter ex ordine excludenda est. An Caryophylleæ?"—*Benth. et Hook. Gen. Pl.* i. p. 776.

2. **Rotala ramosior,** Koehne, Fl. Bras. fasc. lxxiii. p. 194.
Ammannia ramosior, Linn.
Ammannia catholica, Ch. et Schl.
Ammannia occidentalis, DC.

NORTH AMERICA.—SOUTH MEXICO, in wet places near El Estero (*Schiede & Deppe*).—WEST INDIES and BRAZIL and in the PHILIPPINE ISLANDS. Hb. Kew.

2. AMMANNIA.

Ammannia, Linn. Gen. Plant. n. 155; Benth. et Hook. Gen. Plant. i. p. 776.

Bentham estimates the number of species, including *Rotala,* at thirty, generally dispersed in the tropics. They are aquatic or marsh plants.

1. **Ammannia dentifera,** A. Gray, Pl. Wright. ii. p. 55.
NORTH MEXICO, Santa Cruz, Sonora (*Wright*).

2. **Ammannia latifolia,** Linn. Sp. i. p. 119.
NORTH MEXICO, Guadalupe, Chihuahua (*Thurber*).—A very widely dispersed plant TROPICAL and SUBTROPICAL COUNTRIES.

3. **Ammannia sanguinolenta,** Sw. Fl. Ind. Occ. i. p. 272.
SOUTH MEXICO, in wet places near El Estero (*Schiede & Deppe*).—WEST INDIES and SOUTH AMERICA.

4. **Ammannia wrightii,** A. Gray, Pl. Wright. i. p. 55.
TEXAS.—NORTH MEXICO, Sonora (*Wright, Thurber*).

Tribe LYTHREÆ.

3. ADENARIA.

Adenaria, H. B. K. Nov. Gen. et Sp. vi. p. 185; Benth. et Hook. Gen. Plant. i. p. 777.

One or two arboreous species, restricted to Tropical America.

1. **Adenaria lanceolata,** Beurling in Vetensk. Akad. Hand. 1854, p. 124.
PANAMA, in fields (*Billberg*).

2. **Adenaria purpurata,** H. B. K. Nov. Gen. et Sp. vi. p. 185.
PANAMA, Paraiso railway-station (*S. Hayes*, 125), Chagres (*Fendler*, 313).—COLOMBIA, ECUADOR, and PERU. Hb. Kew.

4. CUPHEA.

Cuphea, P. Browne, Nat. Hist. Jam. p. 216; Benth. et Hook. Gen. Plant. i. p. 778.

A large genus of herbs and dwarf shrubs, restricted to America, ranging from the Southern States of North America to Chili and Uruguay, but most numerous in Mexico and Brazil. Bentham and Hooker estimate the number of species at about ninety; and Koehne enumerates 145 in addition to those described here.

1. **Cuphea æquipetala,** Cav. Ic. t. 382. fig. 2; Koehne in Fl. Bras. fasc. lxxiii. p. 235.
Cuphea virgata, Cav. loc. cit. fig. 1.
Cuphea scabrida, H. B. K.
Cuphea floribunda, Lehm., nec Hook.
Cuphea violacea, Regel.
Cuphea ocimoides, Decaisne.
Cuphea atrosanguinea, Warsz.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 241 and 242); SOUTH MEXICO, Tacubaya (*Bilimek*, 282; *Schaffner*), around Toluca (*Andrieux*, 381), Sierra San Pedro Nolasco &c. (*Jurgensen*, 700), valley of Mexico (*Bourgeau*, 354, 124; *Schaffner*, 403), Totutla (*Linden*, 1298), Morelia, 7000 feet (*Galeotti*, 3004), Chiapas (*Ghiesbreght*, 140), Zimapan (*Coulter*, 159 and 160), Misteca

Alta, 7000 feet (*Galeotti*, 2999); GUATEMALA, Volcan de Fuego, 8300 feet (*Salvin*). Hb. Kew.

A very common and variable species.

2. **Cuphea angustifolia,** Jacq., ex Koehne in Fl. Bras. fasc. lxxiii. p. 232.

SOUTH MEXICO, Orizaba (*Botteri*, 229, 806, 807, and 1145; *Bourgeau*, 3165), Tehuacan at 5600 feet (*Galeotti*, 2995). Hb. Kew.

3. **Cuphea** (§ **Melanium**) **anisophylla,** Hemsley, Diag. Pl. Nov. pars 3, p. 51. (Tab. XXIV.)

Suffruticosa, foliis oppositis vel suboppositis sæpissime confertis distichis et in eodem ramulo magnitudine valde variabilibus, superioribus sæpe bracteiformibus, omnibus brevissime petiolatis lanceolato-oblongis ovatisve utrinque parce strigosis simul hispidulis, floribus parvis alternis, pedunculis interpetiolaribus, calycis dentibus subuncinatis, petalis 6 fere æqualibus, staminibus 11 inclusis, filamentis brevissimis barbatis, ovulis ad sex.

Suffrutex ramosus, 9–18-pollicaris, ramis teretibus, graciliusculis, junioribus puberulis. *Folia* brevissime petiolata, opposita vel subopposita, conferta, sæpissime disticha et in eodem ramulo magnitudine valde variabilia, superiora sæpe bracteiformia, omnia lanceolato-oblonga vel ovata, 3–18 lineas longa, acuta vel obtusiuscula, basi sæpissime rotundata, interdum subcordata vel inæqualia, utrinque parce strigosa simul hispidula. *Flores* alterni; pedunculi interpetiolares, 1½–2 lin. longi, apice bibracteolati, bracteolis minutis, persistentibus; calycis tubus rectus, fere ecalcaratus, setosus, circiter 3 lin. longus, intus supra medium pubescens, dentes brevi, subuncinati; petala 6, subæqualia, obovato-oblonga, 1½–2 lin. longa, rosea vel purpurea, basi squamulis minutis albis suffulta; stamina 11, inclusa, filamentis brevissimis, barbatis; ovarium glabrum, 6-ovulatum, stylo brevi. *Fructus* sæpe 4-spermus; semina orbicularia, marginata.—*C. antisyphilitica*, Seem. Bot. Voy. 'Herald,' nec H. B. K.

PANAMA, Chagres (*Fendler*, 111 and 223), by ditches near the city of Panama (*Seemann*, 293), in shady woods near Cruces (*Seemann*, 580).

This species is very closely allied to *C. pseudo-melanium*, Grisebach, a Cuban plant (united by Koehne with *C. melanium*), from which it differs in its larger flowers, uncinulate calyx-teeth, broader obovate petals, and bearded filaments. Possibly more complete material of the Cuban plant may lead to their union. Grisebach's description is altogether insufficient.

EXPLANATION OF TAB. XXIV.

Fig. 1, a flower, enlarged; 2, the same laid open, showing the stamens in a very young state; 3, ovary with side removed, revealing the ovules.

4. **Cuphea apanaxaloa,** DC. Prodr. iii. p. 88; Calques des Dess. Fl. Mex. 323.

MEXICO.

5. **Cuphea appendiculata,** Benth. Pl. Hartw. p. 61.

SOUTH MEXICO, Juquila (*Hartweg*, 462); GUATEMALA, Alta Vera Paz, in thickets near Coban, 4300 feet (*Türckheim*, 172). Hb. Kew.

6. **Cuphea** (§ **Diploptychia**) **aristata,** Hemsley, Diag. Pl. Nov. pars 3, p. 51.

Suffruticosa, ramis gracillimis puberulis, foliis oblongo-lanceolatis glabrescentibus supra nitidis, floribus maximis solitariis interpetiolaribus, calycis tubo fere recto sparse longeque setuloso

intus glabro longissime calcarato, dentibus insigniter uni- vel biaristatis, petalis 6, quorum 2 dorsalia maxima, 4 ventralia minuta, staminibus 11 exsertis, disco subcupulato dorso producto, ovulis ad 8.

Suffrutex, ramis teretibus, virgatis, gracillimis, puberulis. *Folia* opposita, brevissime petiolata, glabrescentia, oblongo-lanceolata, usque sesquipollicaria, obtusiuscula, basi late rotundata vel interdum cuneata, supra nitida, leviter viscida, subtus hispidula, costa lata, elevata, venis immersis. *Flores* solitarii, interpetiolares; pedunculi gracillimi, 4–5 lineas longi, apice bibracteolati, bracteolæ minutissimæ; calycis tubus fere rectus, extus sparse et longiuscule setulosus, simul puberulus vix viscosus, intus glaber, costis duabus longitudinalibus a staminibus duobus brevibus excurrentibus, circiter 15 lineas longus, calcari recto, circiter 4 lineas longo, dentibus fere æqualibus, longe uni- vel biaristatis; petala 6, quorum 2 dorsalia 7–8 lin. longa, basi glandulis squamosis parvis totidem suffulta, 4 ventralia vix 2 lin. longa; stamina 11, quorum 9 exserta, filamentis basi parcissime barbatis; discus subcupulatus, dorso productus; ovarium glabrum, ad 8-ovulatum. *Fructus* maturus a nobis non visus.

Guatemala, valley of Motagua (*Salvin & Godman*, 141). Hb. Kew.

The very slender branches, long, straight calyx-spur, and awned calyx-teeth readily distinguish this species from its nearest allies.

7. **Cuphea balsamona,** Ch. et Schl. in Linnæa, ii. p. 263; Koehne, Fl. Bras. fasc. lxxiii. p. 255, t. 45. fig. 1.

South Mexico, valley of Cordova (*Bourgeau*, 1741), Orizaba (*Bourgeau*, 2701; *Botteri*, 632), near Jalapa (*Schiede*, 575), near Regla (*Ehrenberg*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 793), Mirador (*Linden*, 1296), Vera Cruz (*Galeotti*, 2976 and 3001); Nicaragua, Chontales (*Tate*, 167); Guatemala, Chojoja, Mazatenango (*Bernoulli*, 434), near Coban (*Türckheim*, 126); Panama (*S. Hayes*, 199).—Southward to Uruguay and in the Galapagos Islands. Hb. Kew.

8. **Cuphea bracteata,** Hook. et Arn. Bot. Beech. Voy. p. 289, nec Lag.

South Mexico, Tepic and Jalisco (*Beechey & Sinclair*). Hb. Kew.

9. **Cuphea bustamanta,** La Llave et Lex. Nov. Gen. Desc. fasc. i. p. 21. (Tab. XXV. figg. 1–5.)

Cuphea platycentra, Benth. Pl. Hartw. p. 7, nec Lemaire.

South Mexico, near Vallisoletum (*Lexarza*), Oaxaca (*Ghiesbreght*, 102), in Mexican gardens (*Graham*, *Berlandier*, *Schiede*). Hb. Kew.

From a specimen in the Berlin herbarium there is no doubt that Bentham's *C. platycentra* is the same as La Llave and Lexarza's *C. bustamanta*. The label accompanying the specimen in question bears the following inscription:—"*Cuphea bustamanti* (sic, nec *bustamanta*) sub hoc superiori nomine ex h. bot. Mex. accepi. Oct. 29, Schiede."

This plant is exactly the same as *C. platycentra*, Benth.; and it is also doubtless the true *C. bustamanta*, which was published only some three or four years before Schiede travelled in Mexico.

EXPLANATION OF TAB. XXV. Figg. 1–5.

Fig. 1, portion of a plant, natural size; 2, a flower; 3, upper part of a flower laid open, showing the insertion of the stamens; 4, an ovary; 5, section of the same, showing the ovules: all enlarged.

10. **Cuphea calaminthæfolia,** Schl. in Linnæa, xii. p. 275.
South Mexico, Cuesta Grande de Chiconquiaco (*Schiede*).

11. **Cuphea calcarata,** Benth. Pl. Hartw. p. 7.
North Mexico, Sierra Madre (*Seemann*, 2170), Zacatecas (*Hartweg*, 26); South Mexico, Real del Monte to Zacatecas (*Coulter*), Pazcuaro (*Uhde*). Hb. Kew.

12. **Cuphea corniculata,** Koehne in Fl. Bras. fasc. lxxiii. p. 236.
Mexico (ex *Koehne*).

13. **Cuphea cyanea,** DC. Prodr. iii. p. 85; Calques des Dess. Fl. Mex. 321.
Cuphea coccinea, DC.
Cuphea pubiflora, Benth.
Cuphea strigulosa, Lem. Fl. des Serres, i. t. 14; Paxt. Mag. Bot. xi. 241, nec H. B. K.
Cuphea strigillosa, Lindl. Bot. Reg. xxxii. t. 14.
South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 528 and 707), Cordillera of Oaxaca, 6000 to 8500 feet (*Galeotti*, 2997), Orizaba (*Müller*, 190; *Botteri*, 794; *Sallé*; *Bourgeau*, 2848 and 2937), San Felipe (*Andrieux*, 378), on the cumbre between Oaxaca and La Sierra (*Hartweg*), Temascaltepec (*Ehrenberg*). Hb. Kew.

14. **Cuphea** (§ **Leptocalyx,** Koehne) **debilis,** Hemsley, Diag. Pl. Nov. pars 3, p. 51.
Herbacea?, caulibus adscendentibus debilibus fere filiformibus minutissime transversimque albo puberulis, pilis medio affixis, foliis petiolatis ovato-ellipticis parce strigosis et setulosis, floribus parvis axillaribus solitariis, calycis tubo intus glabro, extus parce patentim setoso simul puberulo, appendicibus dentes duplo triplove superantibus, petalis 6, quorum 2 dorsalia multo majora, staminibus 9, ovulis 8.
Herba?, caulibus adscendentibus debilibus, fere filiformibus, teretibus, infra pedalibus, minutissime transversimque albo-puberulis, pilis medio affixis. *Folia* opposita, longiuscule petiolata, ovato-elliptica, pollicaria, obtusa, utrinque parce strigosa et setulosa. *Flores* solitarii, axillares; pedicelli 5–6 lin. longi, graciles, supra medium bibracteolati; calycis tubus gracilis, breviter calcaratus, curvatus, ad semipollicaris, intus glaber, extus parce patenti-setosus, simul puberulus, appendices oblongæ, crassæ, brevissime setulosæ, dentibus duplo triplove longiores; petala 6, quorum 2 dorsalia 3–4 lineas longa, basi a glandulis squamosis suffulta, cetera minuta; stamina 9, quorum 3 brevissime exserta, filamentis omnibus glabris; discus maximus, calcariformibus, deflexus; ovarium glabrum, 8-ovulatum. *Fructus* maturus ignotus.
South Mexico, Jalapa (*Coulter*, 156). Hb. Kew.
From the description, this must be closely allied to *C. calaminthæfolia,* Schl., of which we have seen no specimens. It differs in the very slender stems, the relatively long appendages of the calyx, and in the smaller number of ovules, as well as in the generally smaller dimensions.

15. **Cuphea decandra,** Ait. Hort. Kew. ed. 2, iii. p. 151.
South Mexico, Consoquitla, near Mirador (*Liebmann*; *Linden*, 39; *Wawra*, 1063), Soledad (*Wawra*, 155), Jalapa, 3000 feet (*Galeotti*, 2992), without locality (*Harris*).—Jamaica; Cuba. Hb. Kew.

16. **Cuphea** (§ **Melvilla,** Koehne) **dodecandra,** Hemsley, Diag. Pl. Nov. pars 3, p. 51. (Tab. XXVI.)

Suffruticosa, demum glaberrima, foliis oppositis lanceolatis usque semipedalibus, floribus fasciculatim racemosis inter maximos interdum sparse glanduloso-hirsutis apetalis, calycis calcari brevi rotundato, dentibus æqualibus crassis ciliatis, tubo intus glabro, staminibus 12 alternis exsertis, ovulis ad 12.

Suffrutex erectus, demum omnino glaberrimus, ramis teretibus, purpureis vel roseis. *Folia* opposita, breviter petiolata, vix coriacea, lanceolata, 3–6-pollicaria, utrinque longe acuminata vel suprema basi fere rotundata, juniora tantum margine ciliolato-glandulosa, adulta glaberrima, lævia, subtus pallidiora. *Flores* apetali, purpurei, fasciculatim racemosi, sparse glanduloso-hirsuti; pedicelli circiter 6 lineas longi, ramulique sparse glanduloso-hirti, apice bracteolis minutis instructi; calycis tubus fere rectus, breviter calcaratus, ad sesquipollicaris, intus glaber, dentibus æqualibus, brevibus, crassis, ciliatis, exappendiculatis; stamina 12, alterna, exserta; filamenta glabra; discus crassus, sphæroideus; ovarium glabrum, ad 12-ovulatum. *Fructus* maturus a nobis non visus.

South Mexico, Pueblo Nuevo, Chiapas (*Linden*, 661). Hb. Kew.

A distinct species, characterized by its ample foliage and dodecandrous apetalous flowers.

EXPLANATION OF TAB. XXVI. Figg. 1–5.

Fig. 1, a flower; 2, upper portion of the same, laid open; 3, an ovary; 4, the same in section: all enlarged.

17. **Cuphea epilobiifolia,** Koehne in Fl. Bras. fasc. lxxiii. p. 223.

Var. **costaricensis,** Koehne in Hb. Berol.

Costa Rica, Aguacate (*Hoffmann*, 733), without locality (*Endres*, 157). Hb. Kew.

The typical plant inhabits Venezuela.

18. **Cuphea glossostoma,** Koehne in Fl. Bras. fasc. lxxiii. p. 234.

South Mexico, Acantla (*Ehrenberg*), without locality (*Bates*). Hb. Kew.

19. **Cuphea graciliflora,** Koehne in Fl. Bras. fasc. lxxiii. p. 236. (Tab. XXV. figg. 6–10.)

South Mexico, Chiapas (*Ghiesbreght*, 715). Hb. Kew.

We have seen no authentically-named specimens of this species; but Ghiesbreght's specimen agrees so well with the description that we have not hesitated to refer it here.

EXPLANATION OF TAB. XXV. Figg. 6–10.

Fig. 6, portion of a plant, natural size; 7, a flower; 8, upper portion of the same, laid open, showing the stamens in a young state; 9, an ovary; 10, section of the same: all enlarged.

20. **Cuphea heteropetala,** Koehne in Fl. Bras. fasc. lxxiii. p. 232.

Mexico (ex *Koehne*).

21. **Cuphea heterophylla,** Benth. Pl. Hartw. p. 37.

South Mexico, in woods, Morelia (*Hartweg*), Oaxaca (*Ghiesbreght*, 106). Hb. Kew.

Koehne refers *C. ternata*, Peyr. in Linnæa, xxx. p. 71, to this; but the description does not agree in some points.

22. **Cuphea hookeriana,** Walp. Rep. Bot. ii. p. 107.

Cuphea floribunda, Hook. et Arn. nec Lehm.

Cuphea roezlii, Carrière in Rev. Hort. 1877, p. 469, cum ic. color.

North Mexico, Sierra Madre (*Seemann*, 2171); South Mexico, San Blas to Tepic (*Sinclair*, *Roezl*), Mirador (*Linden*, 622), Toluca, Cocustepec, 8800 feet (*Heller*), Tepic (*Roezl*). Hb. Kew.

23. **Cuphea hyssopifolia,** H. B. K. Nov. Gen. et Sp. vi. p. 199.

South Mexico, near Jalapa, at 2000 feet (*Humboldt & Bonpland*), at 2000 feet and 4000 feet (*Galeotti*, 2985 and 2986), Misantla (*Schiede*), valley of Cordova (*Bourgeau*, 1495); Guatemala, near Coban (*Türckheim*, 17). Hb. Kew.

24. **Cuphea ignea,** A. DC. ex Koehne in Fl. Bras. fasc. lxxiii. p. 232.

Cuphea platycentra, Lem. Fl. des Serres, t. 180, nec Benth.

South Mexico, Orizaba, 4000 feet (*Galeotti*, 2996; *Sallé*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 804 and 920). Hb. Kew.

25. **Cuphea infundibulum,** Koehne in Fl. Bras. fasc. lxxiii. p. 236.

Cuphea appendiculata, Seem. nec Benth.

Costa Rica, San José, Aguacate, Alto de la Cruz, &c. (*Hoffmann*); Panama, Veraguas (*Warszewicz*), Boquete (*Seemann*, 1178). Hb. Kew.

26. **Cuphea** (§ **Leptocalyx,** Koehne) **intermedia,** Hemsley, Diag. Pl. Nov. pars 3, p. 52.

Fruticosa aut suffruticosa, ramis rectis gracilibus, foliis breviter petiolatis ovato-lanceolatis scaberrimis, floribus axillaribus et extraaxillaribus, calycis tubo extus dense setuloso-hirsuto intus haud costato, dentibus subæqualibus exappendiculatis ciliatis, petalis 6 subæqualibus, ovulis ad 15.

Frutex vel *suffrutex,* ramis teretibus, gracilibus, rectis, junioribus puberulis. *Folia* opposita, breviter petiolata, subcoriacea, ovato-lanceolata vel ovato-oblonga, pollicaria usque sesquipollicaria, acuta vel obtusiuscula, supra breviter setosa, scaberrima, subtus densissime pubescentia, costa venisque lateralibus subtus elevatis, internodiis brevibus. *Flores* axillares et extraaxillares, solitarii vel gemini; pedunculi 1½–3 lineas longi, apice bibracteolati; bracteæ minimæ, subulatæ; calycis tubus fere rectus, primum graciliusculus, circiter pollicaris, extus dense setuloso-hirsutus, intus ecostatus, supra medium tantum hirsutus, calcari brevi, rotundato, dentibus subæqualibus exappendiculatis, ciliatis; petala 6, purpurea vel rosea, subæqualia, 4–6 lineas longa, breviter unguiculata, duo posteriora basi glandulis parvis crassis totidem suffulta; stamina 11, quorum 9 breviter exserta, filamentis sparse barbatis; discus maximus, dorsalis; ovarium glabrum, ad 15-ovulatum. *Fructus* maturus a nobis non visus.

South Mexico, Chiapas (*Ghiesbreght*, 75 and 717). Hb. Kew.

With almost exactly the foliage of some specimens of *C. nitidula*, this has six nearly equal petals, and the calyx-tube wants the two internal longitudinal ribs characteristic of the section to which that species belongs. *C. intermedia* is, in some of its characters, intermediate between Koehne's sections *Leptocalyx* and *Diploptychia*.

27. **Cuphea** (§ **Diploptychia,** Koehne) **ixodes,** Hemsl. Diag. Pl. Nov. pars 3, p. 52.

Fruticosa aut suffruticosa, ramis floriferis elongatis teretibus glanduloso-hirsutis, foliis lanceolatis

brevissime petiolatis strigosis asperrimis, floribus mediocribus viscosissimis racemosis longiuscule pedicellatis, calycis fauce hirsuta, tubo intus infra stamina glaberrimo, calcari adscendente, petalis 6 quorum 4 ventralia minuta, 2 dorsalia basi glandulis carnosis suffulta, staminibus 11, filamentis basi barbatis, disco carnoso oblongo deflecto, ovulis ad octodecim.

Frutex vel *suffrutex*, ramis floriferis elongatis, teretibus, graciliusculis, glanduloso-hirsutis. *Folia* opposita, brevissime petiolata, subcoriacea, sæpissime lanceolata, 1–2-pollicaria, utrinque acuminata vel basi interdum rotundata, mucronata, scaberrima, brevissime et densissime setosa, juniora saltem simul strigosa, venis lateralibus subtus prominentibus. *Flores* racemosi, nec racemoso-paniculati, bracteis linearibus pedicellis æquilongis; pedicelli 3–5 lineas longi, apice bracteolis 2 lineari-subulatis instructi; calyx vix pollicaris, dense glanduloso-hirsutus, viscosissimus, tubo latiusculo, gibboso, apicem versus constricto, intus costis duabus longitudinalibus a staminibus duobus brevibus excurrentibus, infra stamina glaberrimo, fauce hirsuta, calcari longiusculo adscendente, ore obliquo, dentibus brevibus; petala 6, quorum 4 ventralia minuta, 2 dorsalia retrorsa, circiter 4 lineas longa, basi glandulis maximis crasso-carnosis totidem suffulta; stamina 11, alterna breviter exserta, filamentis basi barbatis; discus oblongus, crassus, carnosus; ovarium glabrum, ovulis ad octodecim. *Fructus* a nobis non visus.

Mexico, without locality (*Bates*). Hb. Kew.

Allied to *C. pinetorum* and *C. hookeriana*, but differing in its inflorescence, foliage, and other characters.

28. **Cuphea jorullensis,** H. B. K. Nov. Gen. et Sp. vi. p. 208, non Bot. Mag. t. 5232

Cuphea tricolor, DC., ex Calques des Dess. Fl. Mex. 319.

Cuphea arvensis, Benth.

South Mexico, San Andres, beyond Tacamaca (*Graham*, 207), Morelia (*Hartweg*), Oaxaca (*Ghiesbreght*, 104), Anganguio (*Ehrenberg*, *Hegewisch*), Jorullo (*Humboldt & Bonpland*), without localities (*Uhde*, *Schaffner*, &c.). Hb. Kew.

29. **Cuphea karwinskii,** Koehne in Fl. Bras. fasc. lxxiii. p. 234.

Mexico (ex *Koehne*).

30. **Cuphea llavea,** Llav. et Lex. Nov. Veg. Descr. i. p. 20; Benth. Pl. Hartw. p. 7, non *Cuphea llaveana*, Lindl. Bot. Reg. t. 1386.

Cuphea barbigera, Hook. et Arn.

North Mexico, Cerro de Pinal (*Seemann*, 1523); South Mexico, San Blas to Tepic (*Sinclair*), in mountains near Vallisoletum (*Lexarza*), mountains near Tlaltenango (*Hartweg*), Oaxaca (*Ghiesbreght*, 308). Hb. Kew.

31. **Cuphea laminuligera,** Koehne in Fl. Bras. fasc. lxxiii. p. 234.

South Mexico, Cordillera of Oaxaca, woods on the Pacific side at 4000 feet (*Galeotti*, 2993). Hb. Kew.

32. **Cuphea lanceolata,** Ait. Hort. Kew. ed. 2, iii. p. 605; Sweet, Brit. Fl. Gard. vii. t. 402, nec Bot. Mag. t. 6412.

Cuphea silenoides, Nees, Bot. Mag. t. 4362.

South Mexico, Zimapan &c. (*Coulter*, 151, 152, 157, and 158). Hb. Kew.

33. **Cuphea (§ Balsamona) leptopoda,** Hemsley, Diag. Pl. Nov. pars 3, p. 52.

Annua, erecta, parce ramosa, caule ramulisque glanduloso-pilosis, foliis oppositis longiuscule graciliterque petiolatis ovato-oblongis obtusis vel subacutis utrinque asperis et brevissime setosis simul plus minusve strigillosis, floribus minimis subspicatis, calycis dentibus minutis fere æqualibus, petalis 6, stylo ovario æquilongo, ovulis sæpissime tribus.

Herba annua, erecta, vix pedalis, caule parce ramoso, ramulisque teretibus gracilibus glanduloso-pilosis. *Folia* opposita, tenuia, pallida, longiuscule graciliterque petiolata, lamina ovato-oblonga, usque bipollicaris, obtusâ vel subacuta, basi rotundata vel leviter cuneata, utrinque scabra et brevissime setosa, simul plus minusve strigillosa, subtus venis lateralibus prominulis; petiolus gracillimus, 3–7 lineas longus. *Flores* subspicati, subsessiles, spicis paucifloris terminalibus; calyx longe setosus, primum graciliusculus, 4–5 lineas longus, brevissime calcaratus, dentibus minutis fere æqualibus; petala 6, quorum 2 dorsalia paullo majora, ¾–1½ lin. longa; stamina 11, inclusa, filamentis barbatis; discus parvus, erectus; ovarium glabrum, sæpissime 3-ovulatum, stylo ovarium æquante. *Fructus* 3-spermus; semina orbicularia, magna.

Guatemala, between Esquipulas and Jupilingo (*Bernoulli*, 747). Hb. Kew.

This species is closely allied to *C. micrantha*, H. B. K., differing in the texture, venation, and shape of its slenderly stalked leaves, nearly equally lobed calyx, relatively smaller petals, and longer style.

34. **Cuphea liebmannii,** Koehne in Fl. Bras. fasc. lxxiii. p. 231.

South Mexico, Chiapas (*Ghiesbreght*, 713). Hb. Kew.

35. **Cuphea lobophora,** Koehne in Fl. Bras. fasc. lxxiii. p. 235.

South Mexico, Oaxaca (*Ghiesbreght*, 107). Hb. Kew.

36. **Cuphea lophostoma,** Koehne in Fl. Bras. fasc. lxxiii. p. 233.

South Mexico, Guaxatlan, &c. (*Schiede*). Hb. Berol.

37. **Cuphea micropetala,** H. B. K. Nov. Gen. et Sp. vi. p. 209, t. 551.

Cuphea eminens, Pl. et Lind. Fl. des Serres, t. 994.

Cuphea jorullensis, Bot. Mag. t. 5232, nec H. B. K.

South Mexico, Oaxaca (*Ghiesbreght*, 101), Cuernavaca, Iturbide (*Bourgeau*, 1251), between Chalco and Gonacatepec (*Andrieux*, 380), Sierra San Pedro Nolasco &c. (*Jurgensen*, 727), Guanaxuato (*Humboldt & Bonpland*), Ario (*Ehrenberg*), near Cuantla (*Sartorius*), without locality (*Uhde*). Hb. Kew.

38. **Cuphea microstyla,** Koehne, Fl. Bras. fasc. lxxiii. p. 224.

South Mexico, between Galera and Pochutla, Oaxaca (*Liebmann*); Guatemala (*Skinner*); Costa Rica, near San José (*Hoffmann*, 224; *Polakowsky*). Hb. Kew.

39. **Cuphea mimuloides,** Schl. et Ch. in Linnæa, v. p. 570.

Cuphea gratioloides, Griseb.

South Mexico, in wet places near Mesachica (*Schiede & Deppe*).—Also in Cuba and Guiana. Hb. Berol.

40. **Cuphea miniata,** Brong. Flore des Serres, ii. t. 9.

Mexico, only cultivated specimens seen. Hb. Kew.

41. **Cuphea nitidula,** H. B. K. Nov. Gen. et Sp. vi. p. 206.

Cuphea donkelarii, Hort.

South Mexico, Jalapa, 4200 feet (*Humboldt & Bonpland*; *Galeotti*, 2990; *Coulter*, 155; *Müller*, 1227; *Linden*, 616), Orizaba (*Bourgeau*, 3164; *Botteri*, 631, 1138, and 1140; *Müller*, 463), Hacienda de la Laguna (*Schiede*), Mirador (*Liebmann*), valley of Cordova (*Bourgeau*, 1595). Hb. Kew.

42. **Cuphea** (§ **Diploptychia,** Koehne) **nudicostata,** Hemsley, Diag. Pl. Nov. pars 3, p. 52.

Herbacea, ramulis petiolisque longe glanduloso-pilosis, foliis oppositis longiuscule petiolatis lanceolato-oblongis utrinque asperis et brevissime setosis simul strigosis, floribus axillaribus, calycis tubo extus dense glanduloso-piloso intus glabro, dentibus cum appendicibus longe setosis alternantibus, petalis 6 inæqualibus, staminibus 11 omnibus exsertis, ovulis octo.

Herba annua vel perennis, erecta, ramis subangulatis petiolisque longe glanduloso-pilosis, pilis purpureis. *Folia* opposita, petiolata; lamina lanceolato-oblonga, usque tripollicaris, acuta, utrinque aspera et brevissime setosa, simul strigosa, venis lateralibus primariis subtus prominulis; petiolus teres, graciliusculus, circiter sesquipollicaris. *Flores* axillares, breviter pedunculati; calycis tubus latus, rectus, circiter pollicaris, longiuscule calcaratus, extus dense et longiuscule glanduloso-pilosus, intus glaber, costis duabus longitudinalibus a staminibus duobus brevibus excurrentibus, calcari recto rotundato crasso, ore obliquo, dentibus fere æqualibus, cum appendicibus longe setosis alternantibus; petala 6, inæqualia, 2 dorsalia 5–6 lin. longa, basi glandulis parvis crassis totidem suffulta; stamina 11, omnia exserta; filamenta basi parcissime barbata; discus crassus, deflexus; ovarium glabrum, 8-ovulatum. *Fructus* maturus a nobis non visus.

South Mexico, Ciudad Real (*Linden*, 664). Hb. Kew.

The material from which the foregoing description was drawn up is very meagre; but the species is quite distinct from the two or three others known of the same section.

43. **Cuphea orthodisca,** Koehne in Fl. Bras. fasc. lxxiii. p. 224.

Mexico.

44. **Cuphea** (§ **Enantiocuphea**) **panamensis,** Hemsley, Diag. Pl. Nov. pars 3, p. 52.

Suffruticosa, nana, ramulis junioribus puberulis exceptis glaberrima, foliis oppositis lineari-lanceolatis usque bipollicaribus, floribus parvis graciliter pedunculatis, calycis tubo curvo per anthesin dorso ad medium intruso, lobis brevibus dorsali saltem duplo majore, petalis 6 subæqualibus, staminibus 11, filamentis barbatis, ovario dorso hirsuto, capsula oblonga 50–60-sperma, seminibus subglobosis.

Suffrutex, basi ramosus, adscendens, pedalis vel ultra, ramulis ultimis floriferis, gracilibus, fere filiformibus, parce puberulis, internodiis brevibus. *Folia* opposita, sessilia vel brevissime petiolata, membranacea, lineari-lanceolata, 1–2-pollicaria, vix acuta, utrinque glaberrima, subtus costa rubra, elevata. *Flores* oppositi, pedunculati, interpetiolares, 5–6 lineas longi; pedunculi valde filiformes, 5–10 lineas longi; calycis tubus 4–5 lineas longus, curvus, dorso ad medium intrusus, extus glaber prominenter 12-costatus, intus hirsutus, basi leviter gibbosus nec calcaratus; lobi brevi, inæquales, subobtusi, dorsali rotundato saltem duplo

majore; petala 6, subæqualia, oblongo-obovata; stamina 11, inclusa, 2 dorsalia inferiora, filamentis barbatis; ovarium dorso hirsutum, stylo brevi incluso; discus brevis, annulatus. *Capsula* oblonga, glabra, 50–60-sperma; semina subglobosa.—*Cuphea gracilis*, Seem. Bot. Voy. 'Herald,' p. 121, nec H. B. K.

PANAMA, on rocks in rivers near Panama (*Seemann*, 1222). Hb. Kew.

This species is closely allied to *C. utriculosa*, Koehne, and *C. rivularis*, Seem., differing from the former in its larger flowers, unequal calyx-lobes, insertion of the stamens, &c., and from the latter in being almost glabrous, and in its longer, very slender peduncles. According to Koehne, the species of this section have only nine stamens; but we have found eleven in all the specimens of the species we have examined.

45. **Cuphea palustris,** Koehne in Fl. Bras. fasc. lxxiii. p. 232.

MEXICO, region of Orizaba (*Bourgeau*, 2508). Hb. Paris.

46. **Cuphea pinetorum,** Benth. Pl. Hartw. p. 74.

Cuphea cinnabarina, Planch. Fl. des Serres, v. t. 527.

SOUTH MEXICO, Chiapas (*Ghiesbreght*, 710 and 714); GUATEMALA, in pine-woods near San Ramon (*Hartweg*, 529), Dueñas (*Salvin & Godman*), between Jutiapa and Lake Ayarces (*Bernoulli*, 660), without locality (*Skinner*). Hb. Kew.

Obs. Petala nunc subæqualia, nunc 4 anteriora minuta.

47. **Cuphea procumbens,** Cav. Ic. iv. p. 35, t. 380; Bot. Reg. t. ~~1981.~~ 182 Bot Mag 1931

Cuphea purpurea, Hort.

SOUTH MEXICO, in pastures, Anganguio (*Hartweg*), Orizaba (*Botteri*, 809), Chiapas (*Linden*, 661), Consoquitla, Mirador (*Liebmann*), Jalapa, 4000 feet (*Galeotti*, 2982), Vera Cruz to Orizaba (*Müller*, 96), Cuantla (*Schiede*), Sierra de Guadalupe (*Chrisman*), without localities (*Uhde*, *Sartorius*, *& Aschenborn*). Hb. Kew.

48. **Cuphea** (§ **Melvilla**) **propinqua,** Hemsley, Diag. Pl. Nov. pars 3, p. 53.

Suffruticosa vel herbacea, ramis crassis densissime patenti-setosis, foliis oppositis vel ternatim verticillatis oblongo-lanceolatis scaberrimis, floribus racemosis, calycis tubo rubro-purpureo extus dense setoso intus glabro, petalis 6 quorum 2 dorsalia multo majora, staminibus 11, ovulis ad 7.

Suffrutex vel *herba,* ramis crassis, densissime patenti-setosis, setis longis, rubro-purpureis. *Folia* opposita vel ternatim verticillata (inferiora a nobis non visa), breviter petiolata, oblongo-lanceolata, bipollicaria et ultra, obtusiuscula, scaberrima, tuberculoso-setulosa et parce strigosa, setulis brevissimis. *Flores* racemosi, pedicillati; pedicelli 2–3 lin. longi, apice bibracteolati; calycis tubus fere rectus, rubro-purpureus, vix pollicaris, longiuscule calcaratus, extus dense setosus, intus glaber, calcari constricto, valde recurvo, dentibus inappendiculatis sed valde setoso-ciliatis, ore obliquo; petala 6, quorum 2 dorsalia 3–4 lineas longa, longiuscule unguiculata, obovata, basi glandulis crassis parvis suffulta, 4 ventralia linearia dimidio breviora; stamina 11, exserta, filamentis præter 2 dorsalia medio barbata glabris; ovarium glabrum, ad 7-ovulatum. *Capsula* sæpe 2–4-sperma; semina orbicularia.

MEXICO, without locality (*Bates*). Hb. Kew.

Closely allied to *C. jorullensis*, but differing in the upper petals being larger than

the others, and in the smaller number of ovules. It is also near *C. heterophylla*, which has not the stout shaggy stems of our species.

49. **Cuphea rivularis,** Seem. Bot. Voy. 'Herald,' p. 121.
PANAMA, Tolé, Veraguas (*Seemann*, 1223). Hb. Kew.

50. **Cuphea salicifolia,** Ch. et Schl. in Linnæa, v. p. 569.
SOUTH MEXICO, on the banks of rivers and rivulets near Misantla and Papantla (*Schiede & Deppe*), Los Baños (*Heller*), valley of Cordova (*Bourgeau*, 2111), Colipa and Mirador, Vera Cruz (*Liebmann*), Orizaba (*Botteri*, 925; *Müller*, 1044; *Bourgeau*, 3101). Hb. Kew.

51. **Cuphea secundiflora,** DC. Prodr. iii. p. 84; Calques des Dess. Fl. Mex. 322.
MEXICO.

52. **Cuphea serpyllifolia,** Koehne in Fl. Bras. fasc. lxxiii. p. 223.
SOUTH MEXICO, Sierra San Pedro Nolasco &c. (*Jurgensen*, 793).—VENEZUELA; COLOMBIA. Hb. Kew.

53. **Cuphea setosa,** Koehne in Fl. Bras. fasc. lxxiii. p. 223.
MEXICO, Sierra San Pedro Nolasco &c. (*Jurgensen*, 803 and 652), without locality (*Sallé*).—COLOMBIA; PERU. Hb. Kew.

54. **Cuphea spicata,** Cav. Ic. iv. p. 56, t. 381.
SOUTH MEXICO, Jalapa (*Schiede*, 573), Mirador (*Wawra*, 1049), without locality (*Sartorius*), valley of Cordova (*Bourgeau*, 1594), Jalapa, 4000 feet (*Galeotti*, 2991), Mirador (*Linden*, 620), Colipa (*Liebmann*), without locality (*Harris*, *Jurgensen*, 652, in part).—WEST INDIES, and common in SOUTH AMERICA, extending to URUGUAY and CHILI. Hb. Kew.

55. **Cuphea squamuligera,** Koehne in Fl. Bras. fasc. lxxiii. p. 235.
SOUTH MEXICO, ravines of Morelia, 4000 feet (*Galeotti*, 3017). Hb. Kew.

56. **Cuphea subuligera,** Koehne in Fl. Bras. fasc. lxxiii. p. 231.
MEXICO (ex *Koehne*).

57. **Cuphea tenella,** Hook. et Arn. Bot. Beech. Voy. p. 289.
SOUTH MEXICO, Tepic (*Barclay*). Hb. Kew.
Koehne doubtfully refers this slender annual species to the very different half-shrubby *C. utriculosa*.

58. **Cuphea ternata,** Peyr. in Linnæa, xxx. p. 71.
SOUTH MEXICO, Toluca, 6000 feet (*Heller*).
Koehne refers this to *C. heterophylla*, Benth., from which it seems to differ.

59. **Cuphea tetrapetala,** Koehne in Fl. Bras. fasc. lxxiii. p. 223.
SOUTH MEXICO, Teapa (*Linden*, 660), Sierra San Pedro Nolasco &c. (*Jurgensen*, 653), without locality (*Sallé*).—COLOMBIA. Hb. Kew.

60. **Cuphea utriculosa,** Koehne in Fl. Bras. fasc. lxxiii. p. 222.

South Mexico, Teapa (*Linden*, 662); Guatemala, Mazatenango (*Bernoulli*, 53), without locality (*Skinner*); Nicaragua, Chontales (*Seemann*, 43; *Tate*, 309); Costa Rica, Ojo de Agua (*Hoffmann*, 396; *Endres*, 140). Hb. Kew.

Koehne (*loc. cit.*) doubtfully refers *C. tenella*, Hook. et Arn., which he had probably not seen, to this species; but they are totally distinct.

61. **Cuphea wrightii,** A. Gray, Pl. Wright. ii. p. 56.

Cuphea tolukana, Peyritsch.

New Mexico.—North Mexico, between Bobocomori and Santa Cruz, Sonora (*Wright*); South Mexico, extinct volcano of Batea, between 6000 and 6800 feet (*Guillemin-Tarayre*), valley of Mexico (*Schaffner*, 432; *Bourgeau*, 611), region of Orizaba (*Bourgeau*, 2829; *Botteri*, 808), Oaxaca (*Ghiesbreght*, 105). Hb. Kew.

62. **Cuphea zimapani,** Roezl, ex Regel in Supp. ad Ind. Sem. Hort. Petr. 1868, p. 15.

Cuphea lanceolata, Bot. Mag. t. 6412, nec Ait.

South Mexico. Hb. Kew.

63. **Cuphea,** sp.

South Mexico, Orizaba (*Bilimek*, 313 *a*). Hb. Kew.

64. **Cuphea,** sp. (aff. *C. nitidulæ*, H. B. K.).

South Mexico, Chiapas (*Ghiesbreght*, 717). Hb. Kew.

5. LYTHRUM.

Lythrum, Linn. Gen. Plant. n. 604; Benth. et Hook. Gen. Plant. i. p. 779.

Widely dispersed herbs. Numerous forms have been described; but Bentham and Hooker estimate the number of distinct species at about twelve.

1. **Lythrum alatum,** Pursh, Fl. Am. Sept. i. p. 334.

From Canada southward, chiefly in the Eastern and Southern States, to—North Mexico, Sonora (*Torrey*), common along the Rio Grande (*Mex. Bound. Survey*, 354); South Mexico, at Sanchez, in the district of Mineral del Monte (*Ehrenberg*). Hb. Kew.

2. **Lythrum album,** H. B. K. Nov. Gen. et Sp. vi. p. 193.

South Mexico, near Salamanca, 5400 feet (*Humboldt & Bonpland*).

3. **Lythrum gracile,** Benth. Pl. Hartw. p. 7.

North Mexico, Zacatecas (*Hartweg*, 27), San Luis Potosi (*Virlet d'Aoust*; *Parry & Palmer*, 245); South Mexico, ravines, Guadalaxara (*Galeotti*, 3011), Orizaba, 7500 to 8000 feet (*Heller*, 204). Hb. Kew.

4. **Lythrum hyssopifolia,** Linn. Sp. p. 642.

A very widely distributed plant in the temperate and subtropical regions of nearly all parts of the world, including North Mexico, Monterey (*Eaton & Edwards*, 28), Sonora Alta (*Coulter*, 140). Hb. Kew.

5. **Lythrum kennedianum,** H. B. K. Nov. Gen. et Sp. vi. p 194.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 243); South Mexico, valley of Mexico (*Schaffner*, 536). Hb. Kew.

6. **Lythrum maritimum,** H. B. K. Nov. Gen. et Sp. vi. p. 194.

Tropical and Subtropical North and South America and the Sandwich Islands.—Mexico, Jalapa (*Linden*, 614; *Galeotti*, 2987), Papantla (*Schiede & Deppe*), Orizaba (*Botteri*, 613; *Bourgeau*, 2567; *Müller*, 1660). Hb. Kew.

7. **Lythrum,** sp.

Guatemala, Dueñas, Volcan de Fuego (*Salvin*). Hb. Kew.

6. NESÆA.

Nesæa, Commers. ex Juss. Gen. Plant. p. 332, sub *Lythro*; Benth. et Hook. Gen. Plant. i. p. 779.

About twelve herbaceous and shrubby species, natives of the warm parts of Africa and America.

1. **Nesæa salicifolia,** H. B. K. Nov. Gen. et Sp. vi. p. 192; Hook. Ic. Pl. t. 54 B.

Heimia salicifolia, Link et Otto in Link, Ic. i. t. 28.

North Mexico, Monterey, Nuevo Leon (*Eaton & Edwards*), Camargo to Monterey and Queretaro (*Gregg*), Zacatecas (*Coulter*, 146), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 246); South Mexico, rivulets of Misteca Alta, 7000 feet (*Galeotti*, 2998), Zimapan (*Galeotti*, 3013), about Oaxaca (*Andrieux*, 396), Barranca of Cuernavaca, Iturbide (*Bourgeau*, 1262; *Bilimek*, 166).—Also in South America, southward to Uruguay. Hb. Kew.

2. **Nesæa syphilitica,** DC. Prodr. iii. p. 89, sub *Heimia*; Calques des Dess. Fl. Mex. 326.

Mexico, at Yechpixtla (*Moçino & Sessé*).

7. LAFOENSIA.

Lafoensia, Vandelli in Rœm. Script. p. 112; Benth. et Hook. Gen. Plant. i. p. 781.

Six or eight species of shrubs or small trees, inhabiting Brazil and Colombia.

1. **Lafoensia punicifolia,** A. DC. Mém. Soc. Hort. Gen. iii. pars 2, p. 86, t. 1.

Panama, near Mamei railway-station (*S. Hayes*, 170).—Colombia and Venezuela to Brazil. Hb. Kew.

[8. LAWSONIA.

Lawsonia, Linn. Gen. Plant. n. 482; Benth. et Hook. Gen. Plant. i. p. 782.

Limited to the following species, a native of the Old World.

1. **Lawsonia alba,** Lam. Dict. iii. p. 106; Wight, Ic. Pl. Ind. Or. i. t. 87.

South Mexico, Yucatan and Tabasco (*Johnson*); Guatemala (*Friedrichsthal*); Costa

RICA, Puntarenas (*S. Hayes*, 454).—Widely dispersed over Tropical and Subtropical ASIA and AFRICA; also occurring in NORTH AUSTRALIA, and cultivated and naturalized in America. Hb. Kew.]

9. ANTHERYLIUM.

Antherylium, Rohr et Vahl, Skrift af Nat. Selsk. Hafn. ii. pars 1, p. 211, t. 8; Benth. et Hook. Gen. Plant. i. p. 782.

The genus is at present limited to two shrubby or arboreous species. The other one is a native of St. Thomas and Porto Rico.

1. **Antherylium nudiflorum**, Hemsley, Diag. Pl. Nov. pars 1, p. 13. (Tab. XXVII.)

Inerme, per anthesin aphyllum, foliis non visis, floribus glabris subumbellatim fasciculatis vel corymbosis pedicellatis.

Arbor vel *frutex*, ramulis teretibus, glabris, inermibus, per anthesin aphyllis. *Folia* . . . . *Flores* glabri, longe pedicellati, ad 7–8 lin. diametro, subumbellatim fasciculati vel corymbosi; pedicelli graciles, 4–6 lin. longi, basi parvibracteati, apice infra florem bibracteolati, bracteolis parvissimis; calyx 4- (rarissime 5-) lobus; tubus hemisphæricus; lobi ovato-lanceolati, acuti, tubo duplo longiores; petala 4 (rarissime 5), brevissime unguiculata, corrugata, patentia; stamina numerosissima, uniseriata, filamentis filiformibus; ovarium glabrum, subglobosum, membranaceum, 4-sulcatum, uniloculare, stylo filiformi, elongato, stigmate truncato; ovula minuta, numerosissima.

SOUTH MEXICO, without locality (*Jurgensen*, 956). Hb. Kew.

EXPLANATION OF TAB. XXVII.

A branch, natural size.

Fig. 1, a pentamerous flower; 2, a tetramerous flower; 3, ovary; 4, ovary and portion of calyx, showing the insertion of the stamens.

Order LVII. ONAGRARIEÆ.

Onagrarieæ, Benth. et Hook. Gen. Plant. i. p. 785.

There are about 300 species of this family, belonging to twenty-two genera. They are chiefly herbaceous plants, with the exception of *Fuchsia*; and a very few attain the dimensions of trees. Generally dispersed in temperate regions, and finding their greatest concentration in North America, Mexico, and the Andes of South America.

1. EPILOBIUM.

Epilobium, Linn. Gen. Plant. n. 471; Benth. et Hook. Gen. Plant. i. p. 787.

Herbs or undershrubs. About fifty species, generally dispersed in cold and temperate regions, and especially abundant in New Zealand. Some of the species have a very wide range.

1. **Epilobium brachycarpum,** Presl, Reliq. Hænk. ii. p. 30; Walp. Rep. ii. p. 92.
MEXICO (*Hænke*).

2. **Epilobium coloratum,** Muhl. in Willd. Enum. i. p. 411.
NEW MEXICO; TEXAS.—NORTH MEXICO, Cañon Guadalupe, Sonora (*Smith*).

3. **Epilobium mexicanum,** DC. Prodr. iii. p. 41; Calques des Dess. Fl. Mex. 379.
SOUTH MEXICO, in ditches near Tacubaya (*Bourgeau*, 42), Zimapan (*Coulter*, 161), at the foot of Mount Orizaba, and on the aqueduct near El Palinque (*Schiede & Deppe*), Mineral del Monte, by brooks near San Pedro and San Pablo (*Ehrenberg*). Hb. Kew.

4. **Epilobium repens,** Schl. in Linnæa, xii. p. 267.
SOUTH MEXICO, at the foot of the Volcan de Orizaba (*Schiede*).

2. JUSSIÆA.

Jussiæa, Linn. Gen. Plant. n. 538; Benth. et Hook. Gen. Plant. i. p. 788.

Herbaceous plants, usually growing in water or marshy places. About thirty species, generally dispersed in tropical and subtropical countries, but most numerous in America.

1. **Jussiæa affinis,** DC. Prodr. iii. p. 53.
GUATEMALA, Mazatenango (*Bernoulli*, 583); PANAMA, Chagres (*Fendler*, 115), without locality (*Seemann*, 576).—Widely diffused in TROPICAL AMERICA. Hb. Kew.

2. **Jussiæa alata,** Presl, Reliq. Hænk. ii. p. 34.
SOUTH MEXICO (*Hænke*).

3. **Jussiæa angustifolia,** Lam. Dict. iii. p. 331; Ill. t. 280. fig. 3.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1880), Orizaba (*Botteri*, 747; *Müller*, 995); NICARAGUA, Greytown (*Tate*, 17); PANAMA, Empire railway-station (*S. Hayes*, 329), Chagres (*Fendler*, 116).—A common species in many parts of TROPICAL AMERICA; also in ASIA and AFRICA. Hb. Kew.

4. **Jussiæa calycina,** Presl, Reliq. Hænk. ii. p. 34.
MEXICO (*Hænke*).

5. **Jussiæa hirsuta,** Presl, Reliq. Hænk. ii. p. 34.
MEXICO (*Hænke*).

6. **Jussiæa hirsuta,** Mill. Dict. n. 5; DC. Prodr. iii. p. 58.
SOUTH MEXICO, Campeche.

7. **Jussiæa hirta,** Vahl, Eclog. ii. p. 31; DC. Prodr. iii. p. 57.
COSTA RICA (*Endres*).—SOUTH AMERICA. Hb. Kew.

8. **Jussiæa nervosa,** Poir. Suppl. ii. p. 199; DC. Prodr. iii. p. 56.
PANAMA, Veraguas (*Seemann*, 1224).—COLOMBIA, GUIANA, and BRAZIL. Hb. Kew.

9. **Jussiæa octofila,** DC. Prodr. iii. p. 57.

Jussiæa ligustrifolia, H. B. K.
Jussiæa occidentalis, Nutt.
Jussiæa persicariæfolia, Schl.?

North Mexico, Zacatecas (*Hartweg*); South Mexico, neighbourhood of Oaxaca (*Andrieux*, 388), Vera Cruz (*Linden*, 636), Mirador, 3000 feet (*Heller*), Hacienda de la Laguna (*Schiede*); Nicaragua, banks of streams in the neighbourhood of Granada (*Lévy*); Costa Rica, ditches near San José (*Polakowsky*); Panama, without precise locality (*Sinclair*).—A common plant in Tropical and Subtropical America. Hb. Kew.

Grisebach refers this to *J. suffruticosa.*

10. **Jussiæa peploides,** H. B. K. Nov. Gen. et Sp. vi. p. 97.

South Mexico, Lakes near Oaxaca (*Galeotti*, 3023), Tepic, Jalisco (*Lay & Collie*).—Colombia and Peru. Hb. Kew.

Perhaps only a variety of the next, or of *J. repens.*

11. **Jussiæa peruviana,** Linn. Sp. Pl. p. 555; DC. Prodr. iii. p. 353.

Jussiæa macrocarpa, H. B. K. Nov. Gen. et Sp. vi. p. 102, t. 533.

South Mexico, valley of Cordova (*Bourgeau*, 2046), Orizaba (*Botteri*, 745), Jalapa (*Schiede*); Guatemala, Dueñas, Volcan de Fuego (*Salvin & Godman*); Costa Rica, without locality (*Endres*), in meadows, San José (*Polakowsky*).—Common southward to Peru and in the West Indies. Hb. Kew.

12. **Jussiæa polygonoides,** H. B. K. Nov. Gen. et Sp. vi. p. 97.

South Mexico, in running water near Hacienda de Laguna (*Schiede & Deppe*), Mineral del Monte (*Ehrenberg*).—Colombia. Hb. Kew.

13. **Jussiæa repens,** Linn. Mant. p. 381; DC. Prodr. iii. p. 54.

Jussiæa swartziana, DC.

North Mexico, Sonora Alta (*Coulter*, 183), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 247); South Mexico, Tacubaya (*Bourgeau*, 37), Orizaba (*Botteri*, 748), Zimapan (*Coulter*); Guatemala, Dueñas, Volcan de Fuego (*Salvin*); San Salvador (*Bernoulli*, 4).—A very widely diffused species in Tropical and Subtropical Countries. Hb. Kew.

14. **Jussiæa salicifolia,** H. B. K. Nov. Gen. et Sp. vi. p. 99, t. 530.

South Mexico, Acapulco (*Hænke*).—Colombia.

15. **Jussiæa sedoides,** H. B. K. Nov. Gen. et Sp. vi. p. 98.

Panama, near the village of Anton (*Seemann*).—Southward to Peru and Brazil and in Jamaica. Hb. Kew.

16. **Jussiæa suffruticosa,** Linn. Sp. Pl. p. 555; DC. Prodr. iii. pp. 57, 58.

Jussiæa villosa, Lam. Dict. iii. p. 331.
Jussiæa erecta, Linn. Sp. Pl. p. 556.

South Mexico, Mazatlan (*Coulter*, 181), Cuernavaca (*Bilimek*, 158), Vera Cruz to Orizaba (*Müller*).—Common in most Tropical Countries. Hb. Kew.

17. **Jussiæa tomentosa,** St.-Hil. Fl. Bras. Mérid. ii. p. 254.
South Mexico, valley of Cordova (*Bourgeau*, 2046), region of Orizaba (*Bourgeau*).—Southward to Buenos Ayres. Hb. Kew.

18. **Jussiæa venosa,** Presl, Reliq. Hænk. ii. p. 33.
Mexico (*Hænke*).

19. **Jussiæa,** sp. (? *Jussiæa angustifolia*, var.).
Panama, Chagres (*Fendler*, 114). Hb. Kew.

20. **Jussiæa,** sp.
Nicaragua, Chontales (*Tate*, 6). Hb. Kew.

21. **Jussiæa,** sp.
Guatemala, Dueñas (*Salvin*, 1). Hb. Kew.

22. **Jussiæa,** sp.
Guatemala, Dueñas (*Salvin*, 2). Hb. Kew.

The actual number of species in Mexico and Central America is probably not more than ten or twelve.

3. LUDWIGIA.

Ludwigia, Linn. Gen. Plant. n. 153; Benth. et Hook. Gen. Plant. i. p. 788.

About twenty herbaceous species, the greater part inhabiting North America, a few occurring in the Old World.

1. **Ludwigia palustris,** Ell. Sk. i. p. 214; Torr. & Gr. Fl. N. Am. i. p. 525.
Isnardia palustris, Linn. Sp. Pl. p. 175; DC. Prodr. iii. p. 61.
Canada and Oregon southward to—South Mexico, Cuesta Grande de Chiconquiaco (*Schiede*).—Central and Southern Europe, Northern Africa, and Central Asia. Hb. Kew.

4. ŒNOTHERA.

Œnothera, Linn. Gen. Plant. n. 469; Benth. et Hook. Gen. Plant. i. p 789.

About 100 species, with few exceptions herbaceous plants, and all, except one Tasmanian species, indigenous only in America, though now some of them are widely dispersed in other countries. They inhabit temperate and subtropical regions both in the north and south.

1. **Œnothera albicaulis,** Nutt. in Am. Journ. Sc. ser. 2, xxxiv. p. 334.
Œnothera pallida, Dougl. Bot. Reg. t. 1142.
Western States of North America to—Mexico. Hb. Kew.

2. **Œnothera berlandieri,** Walp. Rep. Bot. ii. p. 85.

Xylopleurum berlandieri, Spach in Nouv. Ann. Mus. iv. p. 369.

MEXICO (*Berlandier*).

3. **Œnothera biennis,** Linn. Sp. Pl. p. 492.

This has a wide range in temperate NORTH AMERICA, southward to—SOUTH MEXICO, valley of Mexico (*Bourgeau*, 564); GUATEMALA, Rio Guacalate (*Salvin*).

It is also naturalized in many parts of the Old World.

Var. **hirsutissima,** A. Gray, Pl. Fendl. i. p. 43, in adnot.

NORTH MEXICO, Chihuahua (*Thurber*), Sonora (*Wright*). Hb. Kew.

4. **Œnothera brachycarpa,** A. Gray, Pl. Wright. i. p. 70.

TEXAS; NEW MEXICO.—NORTH MEXICO. Hb. Kew.

5. **Œnothera chamænerioides,** A. Gray, Pl. Wright. ii. p. 58.

UTAH, southward to—NORTH MEXICO, San Bernardino and Santa Maria, Chihuahua (*Parry*). Hb. Kew.

6. **Œnothera cuprea,** Schl. in Linnæa, xii. p. 269.

SOUTH MEXICO, in elevated pastures, Orizaba (*Schiede*).

7. **Œnothera dentata,** Cav. Ic. iv. p. 67, t. 398; DC. Prodr. iii. p. 46.

Œnothera micrantha, Spreng.

MEXICO (*Bates*).—PERU; CHILI. Hb. Kew.

8. **Œnothera elata,** H. B. K. Nov. Gen. et Sp. vi. p. 90.

MEXICO? (*Humboldt & Bonpland*).

Spec. ex Hort. Bot. Petrop. in Hb. Kew.

9. **Œnothera gauræflora,** Torr. & Gr. Fl. N. Amer. i. p. 510.

CALIFORNIA.—NORTH MEXICO, Sonora (*Schott*).

10. **Œnothera greggii,** A. Gray, Pl. Fendl. i. p. 48, in adnot.

NORTH MEXICO, hills south-east of Pelazo, Chihuahua (*Gregg*).

11. **Œnothera hartwegii,** Benth. Pl. Hartw. p. 5.

Œnothera fendleri, A. Gray.

NEW MEXICO.—NORTH MEXICO, Zacatecas (*Hartweg*), without habitat (*Gregg*). Hb. Kew.

12. **Œnothera hirsuta,** Walp. Rep. Bot. ii. p. 85.

Xylopleurum hirsutum, Spach.

MEXICO.

13. **Œnothera latiflora,** Ser. in DC. Prodr. iii. p. 50; Calques des Dess. Fl. Mex. 376.

MEXICO.

"This should probably be referred to *Œnothera tetraptera,* A. DC."—*Seringe, loc. cit.*

14. **Œnothera littoralis,** Schl. in Linnæa, xii. p. 268.

South Mexico, on the sandy sea-shore between Tecoluta and Nantla (*Ehrenberg*).

15. **Œnothera macrosceles,** A. Gray, Pl. Fendl. i. p. 43, in adnot.

North Mexico, marshy borders of springs, Ojo de Vaca, San José, San Bernardo and Pelayo (*Gregg*).

16. **Œnothera (Allochroa) mexicana,** Spach, Nouv. Ann. Mus. iv. p. 347; Walp. Rep. ii. p. 81.

Texas.—Mexico, without special habitat (*Aschenborn*, 48).

17. **Œnothera micrantha,** Walp. Rep. Bot. ii. p. 84.

Œnothera pinnatifida, Hort., nec H. B. K.

Mexico.

18. **Œnothera pinnatifida,** H. B. K. Nov. Gen. et Sp. vi. p. 91.

South Mexico, near Actopan, at 6250 feet (*Humboldt & Bonpland*).

19. **Œnothera rosea,** Ait. Hort. Kew. ii. p. 3; DC. Prodr. iii. p. 51.

Texas; New Mexico.—North Mexico, valley of the Santa Cruz, Sonora (*Schott*), Zacatecas (*Coulter*, 165), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 251); South Mexico, vicinity of Toluca (*Andrieux*, 386), Jalapa (*Linden*, 624; *Galeotti*, 3032), Real del Monte, 8000 feet (*Galeotti*, 3050), Ciudad Real (*Linden*, 679), region of Orizaba (*Bourgeau*, 2413); Guatemala, Dueñas, Volcan de Fuego, 5000 feet (*Salvin, Bernoulli*, 163).—Also in Colombia and some of the West-Indian Islands. Naturalized in Tropical Africa, India, and the Canary Islands. Hb. Kew.

20. **Œnothera simsiana,** Ser. in DC. Prodr. iii. p. 47.

Œnothera corymbosa, Sims, Bot. Mag. t. 1974, nec Lam.
Œnothera spectabilis, Spach.

Mexico.

21. **Œnothera sinuata,** Michx. Fl. Bor.-Am. i. p. 224; DC. Prodr. iii. p. 48.

Southern States of North America.—North Mexico, San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 253), Zacatecas (*Hartweg*, 11), without locality (*Gregg*, 652); South Mexico, valley of Mexico, Tacubaya (*Bourgeau*, 43, 298), Real del Monte (*Coulter*, 170), Misteca Alta, 7000 feet (*Galeotti*, 3050), Jalapa (*Schiede & Deppe*), between Mexico and Pachuca (*Ehrenberg*). Hb. Kew.

22. **Œnothera speciosa,** Nutt. in Journ. Acad. Philadelph. ii. p. 119; Bot. Mag. t. 3189.

Arkansas; Texas.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 252). Hb. Kew.

23. **Œnothera tetraptera,** Cav. Ic. iii. p. 40, t. 279; DC. Prodr. iii. p. 50.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 250);

South Mexico, valley of Mexico (*Bourgeau*, 42, 44, 300), near Jalapa (*Schiede & Deppe*; *Galeotti*, 3033; *Linden*, 623), Zimapan (*Coulter*, 166, 169); Guatemala, in ditches, Llano (*Bernoulli*, 350).—Venezuela. Hb. Kew.

Naturalized in India.

24. **Œnothera triloba,** Nutt. in Torr. & Gr. Fl. N. Am. i. p. 499.

Saskatchewan southward to—North Mexico, dry bed of lake Gusman, Chihuahua (*Bigelow*), valley between the Salada and Lake Santa Maria, Chihuahua (*Wright*). Hb. Kew.

25. **Œnothera? tubifera,** Ser. in DC. Prodr. iii. p. 50; Calques des Dess. Fl. Mex. 377.

Mexico (*Moçino & Sessé*), ? between Regla and Atotonilco el Grande (*Ehrenberg*).

26. **Œnothera,** sp.

North Mexico, neighbourhood of Matamoras (*Berlandier*, 2289). Hb. Kew.

27. **Œnothera,** sp.

South Mexico, Peak of Orizaba, 10,000 feet (*Linden*, 623; *Galeotti*, 3027), mountains of Oaxaca, at 6000 to 7500 feet (*Galeotti*, 3041). Hb. Kew.

28. **Œnothera,** sp.

South Mexico, vicinity of Toluca (*Andrieux*, 385). Hb. Kew.

29. **Œnothera,** sp.

Costa Rica, without special locality (*Endres*, 255). Hb. Kew.

30. **Œnothera,** sp.

South Mexico, without locality (*Sallé*). Hb. Kew.

31. **Œnothera,** sp.

Guatemala, ridge above Calderas, 8300 feet (*Salvin*). Hb. Kew.

32. **Œnothera,** sp.

North Mexico, Santa Fé (*Bourgeau*, 296). Hb. Kew.

33. **Œnothera,** sp.

Costa Rica, without locality (*Endres*, 100). Hb. Kew.

34. **Œnothera,** sp.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 248). Hb. Kew.

35. **Œnothera,** sp.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 249). Hb. Kew.

5. FUCHSIA.

Fuchsia, Linn. Gen. Plant. n. 128; Benth. et Hook. Gen. Plant. i. p. 790.

Shrubs and undershrubs, or rarely arboreous. There are about seventy species, with the exception of three or four endemic in New Zealand, restricted to America, ranging from Mexico to Patagonia, and most numerous in the mountainous regions on the western side.

1. **Fuchsia arborescens,** Sims (char. amplif.); Hemsl. Diag. Pl. Nov. pars 1, p. 13.

Foliis amplis oppositis ternisve, floribus parvis erectis in paniculas amplas terminales dispositis, paniculis multifloris trichotomis.

Arbor excelsa (vel interdum *frutex*), novellis glabris aut plus minusve pubescentibus. *Folia* petiolata, membranacea, lanceolata, 3–7-pollicaria, utrinque acuta, integra vel serrulata, sæpissime glaberrima, interdum subtus pubescentia, petiolo semi- usque sesquipollicari, stipulis minutis. *Flores* rosei vel purpurei, parvi, semipollicares, erecti, pedicellati, in paniculas densas trichotomas terminales dispositi; calycis tubus cylindricus, lobi lineares patentes, tubum æquantes; petala calycis lobis simillima, paulo breviora; stamina petalis breviora, alterna breviora; ovarium globosum, stylo exserto, stigmate crasso cruciatim 4-lobato.—*Bot. Mag.* t. 2620. *F. syringæflora,* Rev. Hort. 1873, p. 311, cum icone colorata; *F. paniculata,* Lindl. Gard. Chron. 1856, p. 301.

South Mexico, San Bartolo (*Linden*, 676), Jilatepec (*Linden*, 628), Jalapa (*Galeotti*), Cuesta Grande de Jalacingo, Barranca de Tioselo, and between Tioselo and Jicochimalco (*Schiede*), near the city of Mexico (*Hegewisch, Mühlenpfordt*), without habitat (*Jurgensen*, 530), Cordillera of Oaxaca, Pacific side, 7500 feet (*Galeotti*, 3038); Guatemala, ridge above Calderas, 8300 feet (*Salvin & Godman*), without precise locality (*Skinner*). Hb. Kew.

2. **Fuchsia bacillaris,** Lindl.; Hemsl. Diag. Pl. Nov. pars i. p. 14 (char. amplif.).

Glabrescens, foliis calloso-serrulatis, floribus parvis axillaribus solitariis geminis ternatisve, calycis lobis patentibus longe apiculatis, petalis ellipticis rotundatisve truncatis vel retusis patentibus.

Frutex glaberrimus vel novellis parce pilosulis, ramulis gracilibus teretibus. *Folia* petiolata, sæpissime opposita, vix coriacea, cito glaberrima, calloso-serrulata, lanceolata, ovata, elliptica vel fere rotundata, 1–2-pollicaria, obtusa vel acuta, petiolo gracili, 3–6 lin. longo. *Flores* pedunculati, axillares, solitarii, gemini vel terni, ad 6 lin. longi et diametro; calycis tubus latus, supra ovarium constrictus; lobi longe apiculati, patentes, tubo æquales; petala late elliptica vel fere rotundata, apice truncata vel retusa; stamina fere sessilia; ovarium ellipsoideum, stylo vix exserto, stigmate profunde cruciatim 4-lobato.—*Bot. Reg.* t. 1480; *Bot. Mag.* t. 4506.

Mexico (according to Lindley this Fuchsia was raised from Mexican seeds communicated by J. S. Mill, Esq., to Mr. Barnard); Guatemala, Volcan de Agua, 8000 feet (*Salvin & Godman*), Volcan de Fuego, 8300 feet (*Salvin*), Dueñas (*Fraser*). Hb. Kew.

In its small flowers with spreading petals and sepals this comes nearest to *F. thymifolia*, from which it differs abundantly in its foliage. The specimens do not agree

exactly, especially in foliage, with the cultivated plant; but the flowers present no differences of importance.

3. **Fuchsia cordifolia,** Bth.; Hemsley, Diag. Pl. Nov. pars 1, p. 14.

Foliis cordatis cito glabrescentibus, floribus axillaribus longe pedunculatis, calycis tubo vix attenuato basi ventricoso, petalis tertia parte brevioribus quam lobi calycis ovato-rotundatis abrupte acuminatis.

Frutex 5–6-pedalis, novellis sparse puberulis, cæteris glaberrimis. *Folia* opposita, petiolata, membranacea, cordato-ovata, 4–5-pollicaria, acuminata, acuta, calloso-serrulata, petiolo gracillimo, 1½–2½-pollicari. *Flores* puberuli, pedunculati, nutantes, axillares, solitarii, sine ovario ad 2–2½-pollicares, pedunculis 1½–2½-pollicaribus; calycis tubus basi ventricosus, vix deorsum attenuatus, extus puberulus, intus glaberrimus; lobi lanceolati valde acuti, tubo ad triplo breviores; petala ovato-rotundata, abrupte acuminata, calycis lobis triente breviora; stamina paulo exserta; ovarium puberulum, stylo glabro, exserto, stigmate clavato. *Fructus* (teste Hartwegio) 1–1½-pollicaris, coloratus.—*Benth. Pl. Hartw.* p. 74; *Bot. Reg.* 1841, t. 70.

GUATEMALA, about 10,000 feet above the sea (*Hartweg*, 528). Hb. Kew.

Allied to *F. splendens*, but differing in being almost glabrous, in the flowers being longer, and in the petals being broader.

4. **Fuchsia fulgens,** DC. (char. amplif.); Hemsley, Diag. Pl. Nov. pars 1, p. 14.

Foliis amplissimis glabrescentibus cordato-ovatis, floribus longissimis in racemos terminales nutantes dispositis, staminibus breviter exsertis.

Suffrutex, ramis crassis, carnosis, glabris. *Folia* sæpissime opposita, longe petiolata, molliter herbacea, primum plus minusve pubescentia, deinde glaberrima, ovato-cordata, 6-pollicaria vel ultra, serrulata, acuta, petiolo 1–2 poll. vel ultra longo. *Flores* puberuli, pedicellati, 2½–3-pollicares, in racemos elongatos terminales nutantes dispositi; calycis tubus rectus vel leviter arcuatus, deorsum gradatim attenuatus, 2–2½-pollicaris; lobi ovato-lanceolati, acuti, ad semi-pollicares; petala late ovata vel elliptica, acutiuscula, calycis lobis breviora; stamina inclusa vel paulo exserta; ovarium puberulum, oblongum, stylo filiformi, stigmate capitato. *Fructus* maximus, crasso-carnosus, tuberculatus.—*DC. Prodr.* iii. p. 39; *Calques des Dess. Fl. Mex.* 362; *Bot. Mag.* t. 3801; *Bot. Reg.* 1838, t. 1.

SOUTH MEXICO, ravines in Michoacan, at 6000 to 7000 feet (*Galeotti*, 3050), Morelia (*Hartweg*). Hb. Kew.

5. **Fuchsia intermedia,** Hemsley, Diag. Pl. Nov. pars 1, p. 14.

Glabrescens, foliis ovato-cordatis longissime petiolatis, floribus axillaribus longissime pedunculatis, calycis tubo deorsum gradatim attenuato supra ovarium non ventricoso extus sparse puberulo intus glabro, petalis ovato-rotundatis acuminatis obtusiusculis.

Suffrutex, novellis puberulis. *Folia* opposita, petiolata, membranacea, ovata vel basi breviter cordata, 4–5-pollicaria, acuminata, acuta, obscure denticulata, petiolo gracillimo usque bipollicari. *Flores* pedicellati, nutantes, axillares, solitarii, sine ovario ad sesquipollicares; pedunculi gracillimi, 2–2½-pollicares; calycis tubus deorsum gradatim attenuatus, supra ovarium non ventricosus, extus sparse puberulus, intus glaber; lobi lanceolati, acute acuminati, tubo dimidio breviores; petala ovato-rotundata, acuminata, obtusiuscula, calycis lobis tertio breviora; stamina exserta; ovarium cylindricum, elongatum, stylo glabro, exserto, stigmate clavato. *Fructus* ignotus.—*Fuchsia splendens*, Benth. Pl. Hartw. p. 61, vix Zucc.

SOUTH MEXICO, Cumbre of Totontepeque, at 10,000 feet (*Hartweg*, 460). Hb. Kew.

It is somewhat doubtful whether this or *F. splendens*, as defined here, is the true *F. splendens* of Zuccarini, which is very imperfectly described; but, as far as the description goes, it accords better with the species commonly cultivated in this country, and retained here under the name, than with the present plant. This species differs in being much less pubescent, in the calyx-tube tapering gradually downwards and not being fleshy and swollen immediately above the ovary, and in the nearly rotundate petals. It is possible that a more complete series of specimens would furnish connecting-links between *F. intermedia*, *F. splendens*, and *F. cordifolia*. Hartweg collected and dried specimens of our *F. intermedia*, and sent home seeds of the plant generally known as *F. splendens*, of which there are also wild specimens at Kew, both from Guatemala and South Mexico.

6. **Fuchsia microphylla,** H. B. K. (char. emend.); Hemsley, Diag. Pl. Nov. pars 1, p. 15.

Foliis serrulatis, floribus longiuscule pedunculatis ad 6 lin. longis, calycis tubo lato supra ovarium subito constricto, lobis late ovatis apiculatis, petalis fere rotundatis apice irregulariter dentatis vel emarginatis, stylo haud exserto, stigmate 4-lobato.

Frutex 2–6-pedalis, dense ramosus, ramulis gracilibus, plus minusve ferrugineo-tomentosis. *Folia* sæpissime opposita, conferta, breviter petiolata, subcoriacea, glaberrima, serrulata, lanceolata, oblonga, ovata vel obovata, 6–9 lin. longa, acuta vel obtusa. *Flores* longiuscule pedunculati, axillares, solitarii, sæpius nutantes, ad 6 lin. longi; calycis tubus latus, supra ovarium subito constrictus; lobi late ovati, apiculati, erecti, tubo triplo quadroplove breviores; petala irregulariter quadrata vel fere rotundata, apice sæpissime irregulariter dentata, interdum inflexa, lobis calycinis paulo breviora; stamina inclusa, fere sessilia; ovarium globosum, stylo filiformi glabro breviter exserto, stigmate parvo 4-lobato.—*H. B. K. Nov. Gen. et Sp.* vi. p. 103, t. 534; *Bot. Reg.* t. 1269; *Sweet, Fl. Gard.* ser 2, t. 16.

South Mexico, on the road from Real del Monte to Chico (*Hartweg*, 285), La Hoya, Vera Cruz (*Linden*, 627); Popocatepetl, at 10,000 feet (*Galeotti*, 3050), valley of Mexico (*Bourgeau*, 974), without localities (*Parkinson*, *Schiede*, *Tate*, and others); Guatemala, without locality (*Skinner*). Hb. Kew.

7. **Fuchsia microphylla,** H. B. K. Var.? (an species distincta?).

Foliis crassioribus scabridis, floribus puberulis subcarnosis, petalis integris planis.

Guatemala, Volcan de Agua (*Salvin & Godman*, 304). Hb. Kew.

This may be a distinct species; but the material is insufficient to decide the question.

8. **Fuchsia minimiflora,** Hemsley, Diag. Pl. Nov. pars 1, p. 14. (Tab. XXVIII. fig. 1.)

Puberula, ramis crassiusculis, foliis breviter petiolatis ovatis acutis serrulatis, floribus axillaribus solitariis geminisve pedunculatis minus quam 3 lin. longis et diametro, calycis lobis patentibus longioribus quam tubus apiculatis, apiculis in alabastro liberis, stylo vix exserto, stigmate maximo crasso profunde 4-lobato.

Frutex epiphyticus (*Linden*), lignosus, ramosus, ramulis brevibus crassiusculis, junioribus puberulis. *Folia* sæpissime opposita, breviter petiolata, membranacea, utrinque plus minusve pubescentia, ovata, 1–1½-pollicaria, acuminata, acuta, remote calloso-serrulata, venis lateralibus subtus

prominulis arcuatis, petiolo 1–2 lin. longo; stipulæ minutæ, cito deciduæ. *Flores* puberuli, pedunculati, axillares, sæpissime solitarii, vix 3 lin. longi, pedunculis usque 6 lin. longis sed sæpissime brevioribus; calycis tubus brevissimus; lobi lanceolati, longe apiculati, patentes, tubo longiores, apiculis elongatis, subulatis, in alabastro liberis; petala oblongo-elliptica, obtusa, lobis calycinis breviora; stamina inclusa, fere sessilia; ovarium globosum, stylo paulo exserto, stigmate maximo, crasso-carnoso, profunde 4-lobato, lobis horizontaliter divergentibus.

South Mexico, Chiapas (*Linden*, 680; *Ghiesbreght*, 730). Hb. Kew.

A very distinct species, having the smallest flowers of the genus associated with relatively large leaves.

9. **Fuchsia minutiflora,** Hemsley, Diag. Pl. Nov. pars 1, p. 15. (Tab. XXVIII. fig. 3.)

Foliis serrulatis, floribus minimis circiter 3 lineas longis, calycis tubo deorsum gradatim attenuato, lobis lanceolatis acutissimis paulo brevioribus quam tubus, petalis oblongis obtusis integris quam lobi calycini brevioribus, stylo incluso vel breviter exserto, stigmate maximo profunde 4-lobato.

Frutex valde ramosus, ramulis gracillimis, plus minusve furfuraceo-tomentosis. *Folia* sæpissime opposita, brevissime petiolata, vix coriacea, glaberrima, serrulata, ovato-lanceolata, 4–8 lin. longa, rarius longiora, obtusa vel acuta. *Flores* pedunculati, axillares, solitarii, sæpius nutantes, vix 3 lineas longi; pedunculi gracillimi, 2–4 lin. longi; calycis tubus gracilis, deorsum gradatim attenuatus; lobi lanceolati, acuminati, apiculati, tubo vix duplo breviores; petala oblonga, obtusa, integra, lobis calycinis breviora; stamina inclusa, fere sessilia; ovarium parvum, globosum, stylo incluso vel breviter exserto, stigmate profunde 4-lobato. *Fructus* globosus, polyspermus.

South Mexico, Vera Cruz to Orizaba (*Müller*, 1550), peak of Orizaba, at 5000 feet (*Linden*, 631). Hb. Kew.

In foliage this species closely resembles *F. microphylla*; but it is of more slender habit, the leaves are thinner in substance, and the very small flowers are wholly different. The calyx-tube is extremely slender, and the oblong petals are entire.

10. **Fuchsia mixta,** Hemsley, Diag. Pl. Nov. pars 1, p. 15. (Tab. XXVIII. fig. 2.)

Foliis serrulatis, floribus breviter pedunculatis ad 7–9 lineas longis, calycis tubo lato supra ovarium subito constricto, lobis anguste lanceolatis acutis dimidio brevioribus quam tubus, petalis ellipticis integris vel emarginatis quam lobi calycini multo brevioribus, stylo exserto, stigmate 4-lobato.

Frutex, caule robustiusculo, ramulis vix gracilibus, valde foliosis, plus minusve rufo-puberulis. *Folia* sæpissime opposita, breviter petiolata, subcoriacea, glaberrima, serrulata, ovato-lanceolata, 5–8 lineas longa, obtusa vel acuta. *Flores* breviter pedunculati, axillares, solitarii, 7 usque 9 lin. longi; pedunculi 1–3 lin. longi; calycis tubus latus, supra ovarium subito constrictus; lobi anguste lanceolati, acuti, tubo dimidio breviores, subpatentes; petala elliptica, integra, lobis calycinis multo breviora; ovarium globosum, stylo exserto, stigmate 4-lobato.

South Mexico, peak of Orizaba, at 10,000 feet (*Galeotti*, 3025), at 9800 feet (*Linden*, 629); Panama, volcano of Chiriqui (*Seemann*, 1226). Hb. Kew.

This differs from *F. microphylla*, with which it has been confused, in its more robust

habit and larger flowers, spreading sepals, and entire petals. The specimens from Chiriqui are apparently of the same species, but they are destitute of flowers.

11. **Fuchsia parviflora,** Zucc., non Lindl.; Hemsley, Diag. Pl. Nov. pars 1, p. 15 (char. amplif.).

Foliis oppositis alternisve integerrimis membranaceis, floribus unisexualibus vel polygamis.

Frutex, ramulis gracilibus, puberulis. *Folia* petiolata, opposita vel alterna, membranacea, integerrima, molliter pubescentia vel fere glabra, ovato-lanceolata vel elliptica, ¾–2 poll. longa, petiolo gracili, 2–6 lin. longo. *Flores* puberuli, unisexuales vel polygami, graciliter pedunculati, axillares, solitarii, 4–7 lin. longi; pedunculi sæpissime 6–9 lin. longi, interdum breviores; calycis tubus cylindricus, lobis ovatis, apiculatis, erectis quam tubus duplo triplove brevioribus; petala subrotunda, apice sæpissime apiculata, lobis calycinis breviora; stamina fere sessilia; ovarium globosum, stylo paulo exserto, stigmate 4-lobato.—*Zucc. Pl. Nov.* fasc. 2, p. 29. *F. cylindracea,* Lindl. Bot. Reg. xxiv. t. 66; *F. encliandra,* Steud.; ? *F. tetradactyla,* Lindl. Journ. Hort. Soc. Lond. i. p. 304; et *F. acynifolia,* Scheidw. in Walp. Ann. i. p. 292.

South Mexico, Regla, 6000 feet (*Galeotti,* 3046), Zimapan (*Coulter,* 175), Chiapas (*Linden,* 677), without localities (*Sallé, Bates,* and others); Guatemala, near Coban (*Türckheim,* 2), without locality (*Skinner*), Volcan de Fuego, 8300 feet (*Salvin*), Quezaltenango (*Hartweg,* 527). Hb. Kew.

There may be two or more species confused here, though authentic specimens of *F. cylindracea* and *F. parviflora* seem to be united by wild specimens. It is a question of making several species or reducing all the forms to one. From the description, *F. tetradactyla,* Lindl., appears to belong to this species.

12. **Fuchsia splendens,** Zucc.; Hemsley, Diag. Pl. Nov. pars 1, p. 14 (char. amplif.).

Tota pubescens, foliis ovato-cordatis, floribus axillaribus longe pedunculatis, calycis tubo lato intus extusque villosulo deorsum vix attenuato supra ovarium ventricoso, petalis lanceolato-ovatis acutis.

Suffrutex, ramis crassiusculis, ramulis, foliis floribusque pubescentibus. *Folia* opposita, longe petiolata, herbacea, ovato-cordata, 4–5-pollicaria, acute acuminata, denticulata, petiolo gracili, sesqui-bipollicari. *Flores* nutantes, axillares, solitarii, longe graciliterque pedunculati, sine ovario 1¼–1½-pollicares; pedunculi 1–1½-pollicares; calycis tubus rectus, latus, deorsum vix attenuatus, supra ovarium valde ventricosus, crassus, intus extusque villosulus, lobi lanceolati, longe acuminati, acuti, tubo dimidio breviores; petala lanceolata vel ovata, acuta, calycis lobis dimidio breviora; stamina exserta; ovarium anguste cylindraceum, stylo hirsuto exserto, stigmate capitato. *Fructus* immaturus tantum visus, sesquipollicaris.—*Flora,* 1832, ii. *Beibl.* p. 102; *Bot. Mag.* t. 4082; *Bot. Reg.* 1842, t. 67. *F. cordifolia* β, Hook. Ic. Pl. t. 450.

South Mexico, Chiapas (*Ghiesbreght,* 688, 698; *Linden,* 675); Guatemala, without exact locality (*Skinner*). Hb. Kew.

13. **Fuchsia thymifolia,** H. B. K.; Hemsley, Diag. Pl. Nov. pars 1, p. 15.

Foliis parvis integerrimis minute molliterque pubescentibus, floribus graciliter pedunculatis, calycis tubo apice lato deorsum gradatim attenuato, lobis ovatis apiculatis patentibus tubo paulo brevioribus, petalis oblongis ellipticisve undulatis patentibus.

Frutex plus minusve minute pubescens, ramis ramulisque elongatis, gracillimis, teretibus. *Folia* sæpissime alterna, longiuscule petiolata, membranacea, minute molliterque pubescentia, integerrima, ovato-lanceolata, elliptica vel interdum fere rotundata, utrinque obtusa vel acuta, 1–2-pollicaria; petiolo gracili, 2–4 lin. longo. *Flores* graciliter pedunculati, axillares, solitarii, 5–6 lin. diametro; pedunculi filiformes, 4–8 lin. longi; calycis tubus ad 3 lin. longus, apice latus, deorsum gradatim attenuatus, lobi ovati, longe apiculati, patentes, tubo paulo breviores; petala oblonga vel elliptica, obtusa, plana vel undulata, patentia, calycis lobis subæqualia; stamina fere sessilia; ovarium parvum, globosum, stylo exserto, stigmate 4-lobato.—*H. B. K. Nov. Gen. et Sp.* vi. p. 104, t. 535; *Bot. Reg.* t. 1284.

South Mexico, near Pazcuaro, at 6780 feet (*Humboldt & Bonpland*), Real del Monte (*Coulter*, 176), Mineral del Monte (*Ehrenberg*), without localities (*Tate*, *Graham*, and others). Hb. Kew.

This species is readily distinguished among the small-leaved and small-flowered species by its soft entire leaves. Possibly *F. acynifolia*, Scheidw. (Walp. Ann. i. p. 292), may belong here.

14. **Fuchsia,** sp.

South Mexico, San Felipe (*Andrieux*, 389), without locality (*Jurgensen*, 824). Hb. Kew.

Both specimens bear male flowers only. Possibly they may belong to *F. parviflora*, but in habit and foliage they look quite different.

15. **Fuchsia,** sp.

South Mexico, Chiapas (*Ghiesbreght*, 696). Hb. Kew.

The specimen in hb. Kew. bears male flowers only, and they are not unlike those of *F. parviflora*, but the leaves are much larger and otherwise different.

16. **Fuchsia,** sp.

South Mexico, Chiapas (*Ghiesbreght*, 697). Hb. Kew.

This may be only a marked variety of *F. parviflora*, with small somewhat coriaceous leaves and hairy branchlets.

The Mexican and Central-American Fuchsias may be classified, according to their affinities, as follows:—

§ 1. Arborescens, foliis amplis, floribus parvis erectis in paniculas amplas terminales dispositis, staminibus quam petala brevioribus.

F. arborescens.

§ 2. Frutescens, foliis sæpius amplis, floribus sæpissime magnis longe pedicellatis nutantibus axillaribus solitariis vel in racemos terminales dispositis, staminibus quam petala longioribus.

F. fulgens, *cordifolia*, *intermedia* et *splendens.*

§ 3. Frutescens, foliis parvis vel mediocribus, floribus parvis vel minutis axillaribus nutantibus, staminibus quam petala brevioribus.

F. bacillaris, *minimiflora*, *microphylla*, *minutiflora*, *mixta*, *thymifolia*, *parviflora* et affines.

6. HAUYA.

Hauya, Moc. et Sessé in DC. Mém. Onagr. p. 2; Benth. et Hook. Gen. Plant. i. p. 791. (Char. emend.)

Calycis tubus cylindricus, longe supra ovarium in limbum profunde 4-lobum divisus, lobis per anthesin reflexis. *Petala* 4, summo tubo inserta, sessilia. *Stamina* 8, plus minusve exserta, filamentis filiformibus summo tubo insertis, antheris filamentis fere æquilongis, medio-fixis, oscillatoriis, apice aristatis, reticulatis, (in siccis) demum tortis. *Ovarium* 4-loculare; stylus elongatus, stigmate crasso; ovula numerosissima, angulo interiori loculorum biseriatim affixa, adscendentia. *Capsula* lineari-oblonga vel ellipsoidea, loculicide 4-valvis, valvis medio septiferis. *Semina* numerosissima, biseriata, adscendentia, imbricata, testa coriacea, superne in alam auriculatam producta; cotyledones oblongæ, compressæ, planæ; radicula brevissima.—*Frutices* vel *arbores*. Folia alterna, petiolata, simplicia, integerrima. Flores magni, axillares, solitarii, sessiles, ex albo rosei.

The genus is restricted to Mexico and Guatemala.

1. **Hauya barcenæ**, Hemsley, Diag. Pl. Nov. pars 1, p. 13. (Tab. XXIX. fig. 2.)

Glabrescens, foliis ovato-rotundatis longe petiolatis, venis lateralibus subtus prominentibus, calycis lobis tubo æquilongis, petalis ellipticis, stigmate clavato, capsulis bipollicaribus.

Arbor 40-pedalis, ramis junioribus puberulis. *Folia* alterna, puberula, demum glabra, subcoriacea, longe graciliterque petiolata, lamina ovato-rotundata, 2–2½ poll. longa, petiolo ad pollicari; stipulæ minutæ, deciduæ. *Flores* brevissime pedicellati, ad 2½ poll. longi; calyx fere coriaceus, lobis tubo fere æquilongis; petala ovato-rotundata; stigma clavatum. *Capsula* bipollicaris, valvis dorso planis.

South Mexico, Huauapan, Oaxaca (*Andrieux*, 391). Hb. Kew.

Whether the characters upon which this species is founded are constant, it is impossible to say with the limited material before us; but it is probable that this may eventually prove to be no more than an extreme form of *H. elegans*. It is named in honour of Professor Mariano Barcena, of the National Museum of Mexico, who has recently published a 'Noticia Cientifica de una parte del Estado de Hidalgo.' In this little work he enumerates the characteristic plants of the district under consideration, and among other things describes and figures a *Hauya*, which he thinks may be distinct from the original *H. elegans*. His figure is not drawn with botanical precision, and cannot be said to represent exactly either of the forms here admitted to the rank of species; nor does his description agree in all particulars with either this or *H. elegans*.

2. **Hauya cornuta**, Hemsley, Diag. Pl. Nov. pars 1, p. 13. (Tab. XXIX. fig. 3.)

Foliis oblongo-lanceolatis ellipticisve abrupte breviterque acuminatis subtus cano-tomentosis, calycis lobis tubo fere dimidio brevioribus apice cornutis, capsulis vix pollicaribus, valvis dorso distincte carinatis.

Frutex vel *arbor* parva, ramis teretibus, junioribus puberulis. *Folia* alterna, petiolata, vix coriacea, oblongo-lanceolata vel elliptica, 2–3-pollicaria, integerrima, breviter acuminata, supra puberula, subtus cano-tomentosa, petiolo tereti, gracili, 3–6 lin. longo; stipulæ minutæ, subulatæ, mox deciduæ. *Flores* graciles, 2–2½ poll. longi, subvelutini; calycis lobi reflexi, apice dorso cor-

nuti, tubo duplo breviores; petala rotundata, calycis lobis breviora; stigma capitatum, vix exsertum. *Capsula* vix pollicaris, valvis dorso distincte carinatis.

GUATEMALA, Rio Guacalate at 4950 feet (*Salvin*), without locality (*Savage*). Hb. Kew. et Paris.

Apparently a very distinct species, easily distinguished by the distinctly horned tips of the calyx-lobes, and the shorter capsule, with prominently ridged valves.

3. **Hauya elegans,** Moç. et Sess. (char. emend.); Hemsley, Diag. Pl. Nov. pars 1, p. 13. (Tab. XXIX. fig. 1.)

Velutina, foliis lanceolatis ovatis vel fere rotundatis subtus cano-tomentosis vel velutinis, floribus ultra 4-pollicaribus, calycis lobis tubo multo brevioribus, capsulis ad sesquipollicaribus, valvis dorso planis.

Arbor vel *frutex*, ramis puberulis vel junioribus velutinis. *Folia* alterna, petiolata, lanceolata, ovata vel fere rotundata, integra, acute acuminata, subtus cano-velutina, supra tomentosa, demum fere glabra, lamina $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longa, petiolo 3–8 lin. longo. *Flores* subvelutini, maximi usque ad 5-pollicares; calycis lobi reflexi, tubo fere dimidio breviores; petala ovato-rotundata, calycis lobis æquilonga. *Capsula* sesquipoll. longa, valvis dorso planis.—*DC. Mém. Onagr.* p. 2, t. 1; *Prodr.* iii. p. 36.

SOUTH MEXICO, Zimapan (*Coulter*, 172). Hb. Kew.

This differs mainly from our *H. barcenæ* in having much larger flowers, with relatively longer petals and shorter calyx-lobes, and in the dense velvety tomentum. The original figure of *H. elegans* (De Candolle, Mém. Onagr. t. 1) agrees sufficiently with the species as here limited.

EXPLANATION OF TAB. XXIX.

All the species shown natural size.

7. ZAUSCHNERIA.

Zauschneria, Presl, Reliq. Hænk. ii. p. 28; Benth. et Hook. Gen. Plant. i. p. 788.

Restricted to one dwarf shrubby species.

1. **Zauschneria californica,** Presl, Reliq. Hænk. ii. p. 28, t. 52; Bot. Mag. t. 4993.

Zauschneria mexicana, Presl.

CALIFORNIA; NEW MEXICO.—NORTH MEXICO, Sonora (*Thurber*). Hb. Kew.

8. SEMEIANDRA.

Semeiandra, Hook. et Arn. Bot. Beech. Voy. p. 291; Benth. et Hook. Gen. Plant. i. p. 791.

One shrubby species, restricted to Mexico.

1. **Semeiandra grandiflora,** Hook. et Arn. Bot. Beech. Voy. p. 291, t. 59; Bot. Mag. t. 4727.

North Mexico, Sierra Madre (*Seemann*, 2168); South Mexico, San Blas to Tepic (*Coulter*, 180; *Beechey*). Hb. Kew.

9. LOPEZIA.

Lopezia, Cav. Ic. i. p. 12; Benth. et Hook. Gen. Plant. i. p. 791.

This genus is peculiar to Mexico and Guatemala, and consists of herbaceous or slightly shrubby plants.

1. **Lopezia albiflora,** Schl. in Linnæa, xxiv. p. 696.
Mexico or Central America.

2. **Lopezia cordata,** Hornem. Hort. Hafn. Add. p. 949; DC. Prodr. iii. p. 62.
Mexico or Central America.

3. **Lopezia coronata,** Andr. Bot. Rep. t. 551.
Mexico. Hb. Kew.

4. **Lopezia galeottii,** Planch. Fl. des Serres, vii. p. 178.
South Mexico, calcareous rocks at 5000 to 8000 feet (*Galeotti*, 2634, in part). Hb. Kew.
This species and *L. macrophylla*, Bth., were distributed under the same number.

5. **Lopezia grandiflora,** Zucc. in Bot. Zeit. 1832, Beibl. p. 101.
South Mexico, near Santiago.

6. **Lopezia hæmatodes,** Kze. in Linnæa, xvii. p. 579.
Mexico.

7. **Lopezia hirsuta,** Jacq. Coll. v. p. 5, t. 15. fig. 4.
South Mexico, Orizaba (*Sallé*; *Botteri*, 932; *Linden*, 637), at 10,000 feet (*Galeotti*, 3028), in thickets near Jalapa, La Joya, and Jalacingo (*Schiede*), Jalapa at 4000 feet (*Galeotti*, 3034), Chiapas (*Ghiesbreght*, 621); Guatemala, without locality (*Skinner*). Hb. Kew.

8. **Lopezia insignis,** Hemsley, Diag. Pl. Nov. pars 1, p. 16. (Tab. XXX.)

Herbacea, erecta, ramosa, eglandulosa, foliis parvis lanceolatis, floribus longissime pedunculatis, sepalis petalisque linearibus elongatis, petalis sessilibus, staminibus exsertis, ananthero apice limbato, stylo filiformi petalis fere duplo longiore.

Herba (probabiliter pluripedalis) erecta, ramosa, eglandulosa, glabrescens. *Folia* (infima non visa) membranacea, alterna, breviter petiolata, obscure dentata, primum pilosula, deinde glabra, lineari-lanceolata, obtusa, ad pollicaria, superiora minora, bracteiformia. *Flores* angusti, longissime pedunculati, axillares; pedunculi graciles, patentes, apice sæpissime uncinati, 2–3-pollicares; calycis 4-partiti tubus non ultra ovarium productus, lobi lineares, fere sesquipollicares, erecti; petala sessilia, æqualia, similia, linearia, angustissima, calycis lobis æquilonga; stamina 2, libera, longe exserta, alterum fertilium, alterum anantherum petaloideum longis-

sime unguiculatum, apice tantum dilatatum; ovarium breve, stylo filiformi longe exserto, usque bipollicari, stigmate capitato. *Capsula* subglobosa.

South Mexico, without locality (*Bates*). Hb. Kew.

In general appearance this very much resembles *Semeiandra grandiflora*, from which it differs altogether in floral structure. It is also remarkable in the genus *Lopezia* for its long, narrow, equal, sessile petals and very long stamens and style.

9. **Lopezia integrifolia,** DC. Prodr. iii. p. 62.

Mexico (*Alaman*).

10. **Lopezia lineata,** Zucc. Pl. Nov. fasc. ii. p. 31; Bot. Reg. 1848, t. 40.

South Mexico, Orizaba (*Bilimek*, 161; *Hartweg*). Hb. Kew.

11. **Lopezia macrophylla,** Benth. Pl. Hartw. p. 83; Bot. Mag. t. 4724.

South Mexico, calcareous rocks at 5000 to 8000 feet (*Galeotti*, 2634, in part); Guatemala, Dueñas (*Hartweg*), Rio Guacolate, 4950 feet, and Volcan de Fuego, at 6000 feet (*Salvin*). Hb. Kew.

12. **Lopezia mexicana,** Jacq. Ic. Rar. ii. t. 3.

Lopezia racemosa, Cav. Ic. t. 18.

Lopezia coronata, Andr. Rep. viii. t. 551?

North Mexico, Sierra Madre (*Seemann*, 2052 and 2169), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 256½); South Mexico, valley of Mexico (*Bourgeau*, 767; *Schaffner*, 147), valley of Cordova (*Bourgeau*, 1603), Real del Monte (*Coulter*, 178), Toluca, Cocustepec, 8800 feet (*Heller*), in corn-fields, in woods, and on hills, Mineral del Monte (*Ehrenberg*), near the city of Mexico (*Hegewisch*), Toluca (*Andrieux*, 387); Guatemala, without locality (*Skinner*). Hb. Kew.

13. **Lopezia miniata,** DC. Cat. Hort. Monsp. 1813, p. 121; Prodr. iii. p. 62; Jacq. fil. Eclog. t. 109.

Lopezia frutescens, Rœm. et Sch.

Lopezia fruticosa, Schranck.

New Spain, cultivated in Europe. Hb. Kew.

14. **Lopezia oppositifolia,** Lag. Nov. Gen. et Sp. p. 1.

New Spain.

15. **Lopezia paniculata,** Seem. Bot. Voy. 'Herald,' p. 120.

Panama, Boquete, Veraguas (*Seemann*, 1225). Hb. Kew.

16. **Lopezia pubescens,** H. B. K. Nov. Gen. et Sp. vi. p. 96.

South Mexico, in meadows near the town of Pazcuaro, 6780 feet (*Humboldt & Bonpland*).

17. **Lopezia pumila,** H. B. K. Nov. Gen. et Sp. vi. p. 95.

South Mexico, mountains of Guanaxate and Santa Rosa, 6000 to 7750 feet (*Humboldt & Bonpland*).

18. **Lopezia trichota,** Schl. in Linnæa, xii. p. 273.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 256); South Mexico, Cuesta Blanca, on porphyritic rocks (*Ehrenberg*), without locality (*Aschenborn*, 398). Hb. Kew.

19. **Lopezia,** sp.

South Mexico, Chinantla, at 4000 feet (*Galeotti*, 3050). Hb. Kew.

20. **Lopezia,** sp.

Guatemala, Capetillo, Volcan de Fuego, 4600 feet (*Salvin*), Camino del Zapote (*Bernoulli*, 234). Hb. Kew.

21. **Lopezia,** sp. (? *L. coronata*, Andr.).

South Mexico, Zimapan (*Coulter*, 179), without locality (*Sallé*). Hb. Kew.

10. DIPLANDRA.

Diplandra, Hook. et Arn. Bot. Beech. Voy. p. 291; Benth. et Hook. Gen. Plant. i. p. 792.

One shrubby species.

1. **Diplandra lopezioides,** Hook. et Arn. Bot. Beech. Voy. p. 291, t. 60.

South Mexico, Tepic (*Barclay, Beechey*). Hb. Kew.

11. RIESENBACHIA.

Riesenbachia, Presl, Reliq. Hænk. ii. p. 36; Benth. et Hook. Gen. Plant. i. p. 792.

One herbaceous species.

1. **Riesenbachia racemosa,** Presl, Reliq. Hænk. ii. p. 36, t. 54.

Mexico (*Hænke*).

12. GAURA.

Gaura, Linn. Gen. Plant. n. 470; Benth. et Hook. Gen. Plant. i. p. 792.

About twenty herbaceous species, inhabiting Mexico and the warmer parts of North America.

1. **Gaura bracteata,** Ser. in DC. Prodr. iii. p. 45; Calques des Dess. Fl. Mex. 373.

Mexico (*Moçino & Sessé*).

2. **Gaura coccinea,** Nutt. in Torr. & Gray, Fl. N. Am. i. p. 73.

Gaura epiloboides, H. B. K. Nov. Gen. et Sp. vi. p. 93.

Gaura suffrutescens, Ser. in DC. Prodr. iii. p. 45; Calques des Dess. Fl. Mex. 374.

Saskatchewan southward to—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 254, 255), Sonora (*Torrey*); South Mexico, common throughout the valley of Mexico (*Schaffner*), Vera Cruz to Orizaba (*Müller*), near Actopan, 6250 feet (*Humboldt & Bonpland*), in fields between Perote and Tenestepec

(*Schiede & Deppe*), Misteca Alta (*Galeotti*, 3061), Jalapa (*Coulter*, 164), without special localities (*Tate, Hahn, Shepherd, & Aschenborn*). Hb. Kew.

3. **Gaura ? epilobia,** Ser. in DC. Prodr. iii. p. 45 ; Calques des Dess. Fl. Mex. 375.
MEXICO.

4. **Gaura hispida,** Benth. Pl. Hartw. p. 288.
MEXICO, in fields around Leon (*Hartweg*, 1603). Hb. Kew.

5. **Gaura mollis,** H. B. K. Nov. Gen. et Sp. vi. p. 93, t. 529.
Gauridium molle, Spach.
SOUTH MEXICO, vicinity of Oaxaca (*Andrieux*, 384), province of Mexico (*Humboldt & Bonpland, Aschenborn*). Hb. Kew.

6. **Gaura mutabilis,** Cav. Ic. iii. p. 30, t. 285.
Gauridium mutabile, Spach.
Œnothera anomala, Curtis, Bot. Mag. t. 388.
MEXICO ?, garden specimen. Hb. Kew.

7. **Gaura parviflora,** Dougl. in Torr. & Gray, Fl. N. Am. i. p. 519.
OREGON ; CALIFORNIA ; TEXAS.—NORTH MEXICO, without special locality (*Gregg*, 521).

8. **Gaura primiveris,** A. Gray, Pl. Wright. ii. p. 58.
NEW MEXICO.—NORTH MEXICO, Chihuahua (*Potts*). Hb. Kew.

9. **Gaura tripetala,** Cav. Ic. iv. p. 66, t. 396. fig. 1.
Gaura hexandra, Ort.
TEXAS.—NORTH MEXICO ; SOUTH MEXICO, in fields between Perote and Tenestepec (*Schiede & Deppe*), Toluca, 8200 feet (*Heller*), Mexico (*Aschenborn*).

10. **Gaura,** sp.
SOUTH MEXICO, Real del Monte to Zacatecas (*Coulter*, 163), valley of Mexico (*Bourgeau*, 38). Hb. Kew.

11. **Gaura,** sp.
NORTH MEXICO, Sonora Alta (*Coulter*, 173). Hb. Kew.

12. **Gaura,** sp.
SOUTH MEXICO, extinct volcano of Balea, between 6000 and 7000 feet altitude (*Guillemin-Tarayre*). Hb. Kew.

13. **Gaura,** sp.
NORTH MEXICO, in fields around Matamoras (*Berlandier*). Hb. Kew.

13. GONGYLOCARPUS.

Gongylocarpus, Ch. et Sch. in Linnæa, v. p. 557; Benth. et Hook. Gen. Plant. i. p. 793.

An annual herb.

1. **Gongylocarpus rubricaulis,** Ch. et Sch. Linnæa, v. p. 557.

South Mexico, in cultivated and uncultivated places around Jalapa (*Schiede & Deppe*), Chiapas (*Ghiesbreght*); Guatemala, Volcan de Fuego, 5400 feet (*Salvin*). Hb. Kew.

[*Spondylantha aphylla*, Presl, Reliq. Hænk. ii. p. 35, t. 53, is a diseased condition of *Vitis sicyoides*.]

14. CIRCÆA.

Circæa, Linn. Gen. Plant. n. 24; Benth. et Hook. Gen. Plant. i. p. 793.

Small herbs, three or four species inhabiting the temperate and cold parts of Europe, Asia, and North America.

1. **Circæa,** sp.

North Mexico, San Luis Potosi (*Virlet d'Aoust*, 1032). Hb. Paris.

Order LVIII. SAMYDACEÆ.

Samydaceæ, Benth. et Hook. Gen. Plant. i. p. 794.

About 150 shrubby and arboreous species belonging to eighteen genera. Generally dispersed in the tropics, a few species growing in subtropical regions.

Tribe CASEARIEÆ.

1. CASEARIA.

Casearia, Jacq. Stirp. Amer. p. 132; Benth. et Hook. Gen. Plant. i. p. 796.

About eighty species, whereof forty inhabit the Old World, two of them Australia, and the remainder America. At present there is great confusion in this genus; and a careful comparison of the specimens would doubtless result in a considerable reduction of the number of forms retained as species here.

1. **Casearia arguta,** H. B. K. Nov. Gen. et Sp. v. p. 364.

South Mexico, near La Venta del Exido (*Humboldt & Bonpland*).

2. **Casearia corymbosa,** H. B. K. Nov. Gen. et Sp. v. p. 366.

South Mexico, Acapulco (*Beechey*); Orizaba (*Müller*), in thickets near Jalapa (*Schiede & Deppe*), Malpays de Naulingo (*Schiede*); Guatemala, mountains of Las Verdes (*Hartweg*, 576); Nicaragua, Realejo (*Sinclair*); Panama (*S. Hayes*, 110).—Colombia. Hb. Kew.

3. **Casearia dentata,** DC. Prodr. ii. p. 51; Calques des Dess. Fl. Mex. 185. ("An eadem ac *C. hirsuta*?")

Mexico.

4. **Casearia ? dubia,** DC. Prodr. ii. p. 51; Calques des Dess. Fl. Mex. 184.
MEXICO.

5. **Casearia hirsuta,** Sw. Fl. Ind. Occ. ii. p. 755.
Casearia ramiflora, Seem. Bot. Voy. 'Herald,' nec Vahl.
PANAMA, Cruces (*Seemann*, 563), Chagres (*Fendler*, 192; *S. Hayes*, 111.)—to GUIANA, BRAZIL, and the WEST INDIES. Hb. Kew.

6. **Casearia icosandra,** Pl. et Tr. MSS. in Hb. Kew.
Samyda icosandra, Sw. Fl. Ind. Occ. p. 1962.
Zuelania lætioides, A. Rich. Fl. Cub. p. 89, t. 12.
Thiodia serrata, Griseb., nec *Thiodia,* Bennett.
PANAMA, Chagres (*Fendler*, 318), Paraiso railway-station (*S. Hayes*).—CUBA and JAMAICA. Hb. Kew.

7. **Casearia nitida,** Jacq. Am. p. 132; Act. Helv. viii. p. 58, cum icone.
SOUTH MEXICO, near Tantoyuca (*Ervendberg*, 338).—COLOMBIA.

8. **Casearia obovata,** Schl. in Linnæa, xiii. p. 434.
SOUTH MEXICO, in woods near the Hacienda de la Orduña (*Schiede*).

9. **Casearia parviflora,** Willd. Sp. ii. p. 627.
Casearia carpinifolia, Benth. in Hook. Journ. Bot. x. p. 112.
SOUTH MEXICO, Mirador (*Linden*, 592), Cordova (*Botteri*, 976), Cordillera of Vera Cruz, at 3000 feet (*Galeotti*, 2878); PANAMA, Chagres (*Fendler*, 186).
This should perhaps be referred to *C. sylvestris*, Sw., a species having a very wide geographical area in Tropical America.

10. **Casearia ramiflora,** Vahl, Symb. ii. p. 50, nec Seem.
Iroucana guianensis, Aubl. Guian. i. p. 329, t. 127.
PANAMA, Chagres (*Fendler*, 192).—GUIANA and the WEST INDIES. Hb. Kew.

11. **Casearia spinosa,** Willd. Sp. Pl. ii. p. 626.
Casearia aculeata, Jacq. Amer. p. 133.
Casearia prunifolia, Tul. nec H. B. K.
SOUTH MEXICO, Plan del Rio (*Schiede*); PANAMA (*Seemann*).—A widely dispersed species in Tropical SOUTH AMERICA. Hb. Kew.

12. **Casearia,** sp.
SOUTH MEXICO, Jalapa (*Linden*, 14). Hb. Kew.

13. **Casearia,** sp.
SOUTH MEXICO, Orizaba (*Botteri*, 1061). Hb. Kew.

14. **Casearia,** sp.
NICARAGUA, Chontales (*Tate*, 332). Hb. Kew.

15. **Casearia,** sp.
"CENTRAL AMERICA" (*Cuming*, 1303). Hb. Kew.

16. **Casearia,** sp.
SOUTH MEXICO, Tuspango, near Cordova (*Bourgeau*, 2447), Hb. Kew.

17. **Casearia,** sp.
PANAMA, Chagres (*Fendler*, 185), Remedios, Veraguas (*Seemann*), without locality (*Cuming*, 1274). Hb. Kew.

18. **Casearia,** sp.
GUATEMALA (*Friedrichsthal*, 1). Hb. Kew.

19. **Casearia,** sp.
GUATEMALA (*Friedrichsthal*, 2). Hb. Kew.

20. **Casearia,** sp.
SOUTH MEXICO (*Hahn*, 1). Hb. Kew.

21. **Casearia,** sp.
SOUTH MEXICO, stony places on the banks of the Rio Teapa (*Linden*, 621). Hb. Kew.

2. SAMYDA.

Samyda, Linn. Gen. Plant. n. p. 543; Benth. et Hook. Gen. Plant. i. p. 797.

The genus consists of two West-Indian species, besides the following doubtful plants.

1. **Samyda macrocarpa,** DC. Prodr. ii. p. 48; Calques des Dess. Fl. Mex. 183.
MEXICO.

2. **Samyda rubra,** DC. Prodr. ii. p. 48; Calques des Dess. Fl. Mex. 182.
MEXICO.

3. **Samyda,** sp. (*S. serrulatæ* affinis).
SOUTH MEXICO, Acapulco (*Sinclair*). Hb. Kew.

Tribe BANAREÆ.

There are two American and one Tropical West-African species belonging to this tribe.

3. BANARA.

Banara, Aubl. Pl. Guian. i. p. 547; Benth. et Hook. Gen. Plant. i. p. 798.

About twelve species, inhabiting Tropical America.

1. **Banara dioica,** Benth. in Journ. Linn. Soc. v. Suppl. p. 94.
SOUTH MEXICO, Vera Cruz (*Linden*, 31; *Galeotti*, 7019).

2. **Banara ibaguensis,** Tul. in Ann. Sc. Nat. sér. 3, vii. p. 291.
PANAMA, without special locality (*Duchassaing*).—COLOMBIA.

3. **Banara mexicana,** A. Gr. in Proc. Am. Acad. v. p. 174.
SOUTH MEXICO, near Tantoyuca, Huasteca (*Ervendberg*, 121, 247). Hb. Kew.

4. **Banara mollis,** Tul. in Ann. Sc. Nat. sér. 3, vii. p. 288.
PANAMA, in woods near the city of Panama (*S. Hayes*, 675).—Nearly all over Tropical AMERICA. Hb. Kew.

Tribe HOMALIEÆ.

4. HOMALIUM.

Homalium, Jacq. Amer. p. 170; Benth. et Hook. Gen. Plant. i. p. 800.

About thirty species, natives of Asia, Africa, North Australia, Fiji Islands, and Tropical America.

1. **Homalium racemosum,** Jacq. Amer. p. 170, t. 183.
PANAMA, in damp thick woods, Frijoli railway-station (*S. Hayes*, 488).—Widely dispersed in the WEST-INDIAN Islands and Tropical SOUTH AMERICA. Hb. Kew.

2. **Homalium senarium,** DC. Prodr. ii. p. 54; Calques des Dess. Fl. Mex. 293.
MEXICO.

Order LIX. LOASEÆ.

Loaseæ, Benth. et Hook. Gen. Plant. i. p. 801.

A small family of herbaceous or, rarely, shrubby plants, comprising eleven genera and about 100 species. With the exception of the monotypic genus *Kissenia,* which has a wide range in Eastern Africa and Arabia, all are endemic in America, ranging from the warmer parts of North America to Chili.

1. GRONOVIA.

Gronovia, Linn. Gen. Plant. n. 282; Benth. et Hook. Gen. Plant. i. p. 802.

The only species:—

1. **Gronovia scandens,** Linn. Sp. Pl. p. 292; Jacq. Ic. Rar. ii. t. 338; Hook. et Arn. Bot. Beech. Voy. t. 97.
TEXAS.—NORTH MEXICO, Victoria de Tamaulipas (*Berlandier*, 2267); SOUTH MEXICO, near Tantoyuca (*Ervendberg*), on the sea-coast, Campeche (*Bonpland*); PANAMA (*S. Hayes*, 71).—Also in VENEZUELA and PERU. Hb. Kew.

2. CEVALLIA.

Cevallia, Lag. Nov. Gen. et Sp. p. 11; Benth. et Hook. Gen. Plant. i. p. 803.

Also a monotypic genus.

1. **Cevallia sinuata,** Lag. Nov. Gen. et Sp. p. 11, t. 1; Hook. Ic. Pl. t. 252.
TEXAS; NEW MEXICO.—NORTH MEXICO, Sonora (*Torrey*); San Luis Potosi to San Antonio, Texas (*Parry*, 258). Hb. Kew.

3. PETALONYX.

Petalonyx, A. Gray, Pl. Thurb. in Mem. Amer. Acad. v. p. 319; Benth. et Hook. Gen. Plant. i. p. 803.

Monotypic.

1. **Petalonyx thurberi,** A. Gray, Pl. Thurb. p. 319; Torrey in Rep. Emory's Exped. t. 22.
NORTH MEXICO, valley of the Gila, Sonora (*Thurber*, 683). Hb. Kew.

4. SCLEROTHRIX.

Sclerothrix, Presl, Symb. Bot. ii. p. 3; Benth. et Hook. Gen. Plant. i. p. 803.

Two or three species, ranging from Mexico to Peru.

1. **Sclerothrix fasciculata,** Presl, Symb. Bot. ii. p. 3, t. 53.
Ancyrostemma micranthum, Poepp. et Endl. Nov. Gen. et Sp. iii. p. 65, t. 272.
SOUTH MEXICO, Orizaba (*Sallé*).—VENEZUELA and COLOMBIA to PERU. Hb. Kew.

5. MENTZELIA.

Mentzelia, Linn. Gen. Plant. n. 670; Benth. et Hook. Gen. Plant. i. p. 804.

About thirty species, growing chiefly on the western side of North and South America.

1. **Mentzelia hispida,** Willd. Sp. Pl. ii. p. 1176; Bot. Mag. t. 3205.
Mentzelia stipitata, DC. Prodr. iii. p. 343; Calques des Dess. Fl. Mex. 358; The Botanist, i. t. 34.
Mentzelia aspera, Cav. nec Linn.
CALIFORNIA.—NORTH MEXICO, Zacatecas (*Coulter*, 54; *Hartweg*, 16), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 257); SOUTH MEXICO, Tacubaya (*Bilimek*, 250), Cordillera of Oaxaca (*Galeotti*, 3681), Real del Monte (*Coulter*, 53), valley of Mexico (*Bourgeau*, 295; *Schaffner*, 160 or 149), without locality (*Parkinson*). —Southward to Peru. Hb. Kew.

2. **Mentzelia lobata,** Hemsley.
Microsperma lobata, Hook. Ic. Pl. t. 234.
Eucnide lobata, A. Gray, Pl. Lindh. p. 192.
Microsperma rudis, Schauer in Linnæa, xx. p. 721?
NORTH MEXICO, Saltillo &c. (*Gregg*), Santa Catarina, near Monterey, Nuevo Leon (*Berlandier*, 1390); SOUTH MEXICO, Zimapan (*Coulter*, 55), Oaxaca (*Ghiesbreght*). Hb. Kew.

3. **Mentzelia oligosperma,** Nutt. in Bot. Mag. t. 1760.

TEXAS; NEW MEXICO.—NORTH MEXICO, pass of the Chiricahui Mountains, Sonora (*Wright*). Hb. Kew.

4. **Mentzelia stipitata,** Presl, Reliq. Hænk. ii. p. 40.

MEXICO.

This may be the same as *M. hispida*.

5. **Mentzelia strigosa,** H. B. K. Nov. Gen. et Sp. vi. p. 120.

SOUTH MEXICO, near the Rio Sarco, 5900 feet (*Humboldt & Bonpland*).

6. **Mentzelia,** sp.

SOUTH MEXICO, Oaxaca, woods at 7000 feet (*Galeotti*, 3682). Hb. Kew.

7. **Mentzelia,** sp.

SOUTH MEXICO, region of Orizaba, Escamella (*Bourgeau*, 3286). Hb. Kew.

8. **Mentzelia,** sp.

SOUTH MEXICO, Cuernavaca, Iturbide (*Bourgeau*, 1389). Hb. Kew.

6. LOASA.

Loasa, Juss. Gen. Plant. p. 322; Benth. et Hook. Gen. Plant. i. p. 804.

About fifty species, spread over Tropical America, with the exception of North Brazil and Guiana.

1. **Loasa rhœadifolia,** Schl. in Linnæa, xiv. p. 382.

SOUTH MEXICO, Cuesta Grande de Chiconquiaco (*Schiede*).

2. **Loasa rudis,** Benth. Pl. Hartw. p. 75.

GUATEMALA, Santa Maria (*Hartweg*). Hb. Kew.

3. **Loasa,** sp. ("*L. chelidonifoliæ*, Benth. Bot. Voy. Sulph. p. 101, proxima, sed differt."—*Planchon*, MSS. in hb. Kew.)

GUATEMALA (*Skinner*); COSTA RICA (*Endres*, 42). Hb. Kew.

4. **Loasa,** sp.

SOUTH MEXICO, Oaxaca (*Ghiesbreght*). Hb. Kew.

7. ILLAIREA.

Illairea, Lenne et Koch, ex Planchon in Fl. des Serres, sér. 1, ix. p. 145.

The only species, doubtfully referred to *Loasa* by Bentham and Hooker (Gen. Plant. i. p. 805):—

1. **Illairea canarinoides,** Lenne et Koch in Fl. des Serres, t. 913; Bot. Mag. t. 5022.

CENTRAL AMERICA, introduced into European gardens by *Warszewicz*.

Order LX. TURNERACEÆ.

Turneraceæ, Benth. et Hook. Gen. Plant. i. p. 806.

About seventy-five herbaceous and shrubby species, belonging to four genera, one of which is restricted to Africa, one (consisting of one arboreous species) to Rodriguez. Most of the species of the other genera are American.

1. TURNERA.

Turnera, Linn. Gen. Plant. n. 376; Benth. et Hook. Gen. Plant. i. p. 806.

Nearly seventy species, all, except one South-African, restricted to Tropical America. One of the American species is also widely spread in India, where, however, it is not indigenous.

1. **Turnera alba,** Liebm. in Ann. Sc. Nat. sér. 3, ix. p. 318.
South Mexico, on the banks of the Rio de las Vueltas, Oaxaca (*Liebmann*).

2. **Turnera aphrodisiaca,** L. F. Ward, Virginia Medical Monthly, April, 1876.
? North Mexico, region of San Luis Potosi (*Parry & Palmer*, 93). Hb. Kew.

3. **Turnera cærulea,** DC. Prodr. iii. p. 346; Calques des Dess. Fl. Mex. 386.
Mexico.

4. **Turnera cistoides,** Linn. Sp. Pl. p. 387; Burm. ed. Plumier, t. 150.
Piriqueta cistoides, Griseb.
Mexico, Tampico (*Berlandier*, 62); Panama, without locality (*Duchassaing*).—In South America to Brazil and in Cuba. Hb. Kew.

5. **Turnera hindsiana,** Benth. Bot. Voy. Sulph. p. 101.
Panama, without locality (*Seemann*).—Southward to Peru and Brazil. Hb. Kew.

6. **Turnera humifusa,** Endl. in Walp. Rep. ii. p. 230.
Bohadschia humifusa, Presl, Reliq. Hænk. ii. p. 98, t. 68.
South Mexico, port and town of Acapulco (*Hænke*).

7. **Turnera mollis,** H. B. K. Nov. Gen. et Sp. vi. p. 126.
South Mexico, Volcan de Jorullo (*Humboldt & Bonpland*), Acapulco (*Hænke*).

8. **Turnera pumilea,** Linn. Amœn. v. p. 395; Sloane, Jamaica, t. 127. fig. 6.
South Mexico, near Tantoyuca (*Ervendberg*, 134).—Jamaica.

9. **Turnera trioniflora,** Sims, Bot. Mag. t. 2106.
Turnera elegans, Otto; Knowles et Westcott, Fl. Cab. i. t. 2.
South Mexico, near El Morro (*Schiede*).—Brazil and Trinidad.

10. **Turnera ulmifolia,** Linn. Sp. Pl. p. 695; Mill. Ic. t. 268. fig. 2.
Turnera ulmifolia, β. angustifolia, Willd. Sp. Pl. p. 1503; Bot. Mag. t. 4137.
Turnera angustifolia, Mill. Bot. Mag. t. 281.

South Mexico, Cordillera of Oaxaca (*Galeotti*, 7141); Nicaragua, Realejo (*Sinclair*). —In Cuba and southward to Peru and Brazil. Also in the Galapagos Islands, and widely naturalized in India. Hb. Kew.

11. **Turnera velutina,** Presl, Reliq. Hænk. ii. p. 44.
South Mexico, Acapulco (*Hænke*).

12. **Turnera,** sp.
Costa Rica (*Endres*, 204). Hb. Kew.

13. **Turnera,** sp. (aff. *T. aurantiacæ*).
Panama, Empire railway-station (*S. Hayes*, 114). Hb. Kew.

14. **Turnera,** sp.
South Mexico, Zimapan (*Coulter*, 798), Cordillera of Oaxaca, at 3000 feet (*Galeotti*, 4077), Mirador (*Galeotti*, 831). Hb. Kew.

2. ERBLICHIA.

Erblichia, Seem. Bot. Voy. 'Herald,' p. 130; Benth. et Hook. Gen. Plant. i. p. 807.

Monotypic.

1. **Erblichia odorata,** Seem. Bot. Voy. 'Herald,' p. 130, t. 27.
Panama, on the outskirts of woods, Paredez Islands (*Seemann*). Hb. Kew.

Order LXI. PASSIFLORACEÆ.

Passifloreæ, Benth. et Hook. Gen. Plant. i. p. 807; Masters in Fl. Bras. xiii. pt. 1.

Trees, shrubs, or herbs. About 300 species, belonging to twenty-five genera. The species are generally dispersed in tropical and subtropical regions, though by far most numerous in America. The genera are most numerous in Tropical and South Africa.

Tribe PASSIFLOREÆ.

1. PASSIFLORA.

Passiflora, Linn. Gen. Plant. n. 1021; Benth. et Hook. Gen. Plant. i. p. 810; Masters in Fl. Bras. xiii. pt. 1, p. 542.

Climbing shrubs or herbs, rarely erect and arboreous. There are upwards of 180

species, 156 of which are indigenous in America; the others are widely dispersed in the warmer parts of the Old World. In America the genus ranges from Virginia and Pennsylvania to South Brazil and Chili.

1. **Passiflora adenophylla,** Mast. in Fl. Bras. xiii. pt. 1, p. 568.

South Mexico, between Ciudad Real and Casata (*Linden*, 857), without habitats (*Galeotti*, 5664; *Hahn*, 2437). Hb. Kew.

2. **Passiflora adenopoda,** DC. Prodr. iii. p. 330; Calques des Dess. Fl. Mex. 32.
Passiflora acerifolia, Ch. et Schl. in Linnæa, v. p. 89.

South Mexico, valley of Cordova and region of Orizaba (*Bourgeau*, 3263); Panama, Boquete (*Seemann*, 1626).—Venezuela; Colombia. Hb. Kew.

3. **Passiflora alnifolia,** H. B. K. Nov. Gen. et Sp. ii. p. 136.

?South Mexico, without locality (*Jurgensen*, 886). The true plant has a wide range in the States of Colombia. Hb. Kew.

4. **Passiflora auriculata,** H. B. K. Nov. Gen. et Sp. ii. p. 131.
Passiflora rohrii, DC. Prodr. iii. p. 326.

Nicaragua, Chontales (*Tate*, 314, 432); Panama, Chagres (*Fendler*, 122).—West Indies and north part of South America. Hb. Kew.

5. **Passiflora bilobata,** Juss. in Ann. Mus. vi. p. 107, t. 37.
Passiflora contrayerva, Sm. in Rees's Cycl. n. 23.

Mexico (*Pavon*).—San Domingo.

6. **Passiflora bryonioides,** H. B. K. Nov. Gen. et Sp. ii. p. 140.
Passiflora exudans, Zucc. in Abhandl. bayer. Akad. Wiss. ii. p. 342.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 259); South Mexico, near Santa Rosa (*Humboldt & Bonpland*, *Hahn*, *Coulter*, *Karwinski*). Hb. Kew.

7. **Passiflora capsularis,** Linn. Sp. Pl. p. 234.
Passiflora bilobata, Fl. Flum. ix. t. 78, nec Juss.

South Mexico, Mirador (*Linden*, 752).—Southward to Ecuador and Brazil. Hb. Kew.

8. **Passiflora ceratosepala,** Mast. in Fl. Bras. xiii. pt. 1, p. 555.
Ceratosepalum parviflorum, Œrsted, L'Amér. Centr. t. 17.

Central America (*Œrsted*).

9. **Passiflora coriacea,** Juss. in Ann. Mus. vi. p. 109, t. 39. fig. 2.
Passiflora difformis, H. B. K. Nov. Gen. et Sp. ii. p. 136.
Passiflora clypeata, Sm. in Rees's Cycl. n. 23.

South Mexico, without locality (*Liebmann*); Panama, San Juan, Cruces, Panama, &c. (*Seemann*, 501).—Jamaica, and Colombia to Peru. Hb. Kew.

10. **Passiflora cuneata,** Willd. Enum. Hort. Berol. p. 696; Mast. in Fl. Bras. xiii. pt. 1, p. 549.

Panama, in damp woods, Lion-Hill railway-station (*S. Hayes*, 601).—Venezuela. Hb. Kew.

11. **Passiflora dictamo,** DC. Prodr. iii. p. 324; Calques des Dess. Fl. Mex. 28.

Mexico.

12. **Passiflora edulis,** Sims, Bot. Mag. t. 1989.

Guatemala, Las Nubes, Cerro de Zunil (*Salvin*).—A variable species, commonly cultivated for its fruit in Tropical America and other countries. Hb. Kew.

13. **Passiflora erythrophylla,** Mast. in Fl. Bras. xiii. pt. 1, p. 553.

Mexico.—Colombia.

14. **Passiflora fuscinata,** Mast. in Fl. Bras. xiii. pt. 1, p. 551.

Passiflora trisetosa, DC.Prodr. iii. p. 324; Calques des Dess. Fl. Mex. 29?

South Mexico, Mirador (*Liebmann*). A sketch only in hb. Kew.

15. **Passiflora filipes,** Benth. Pl. Hartw. p. 118.

Texas.—North Mexico, Victoria de Tamaulipas (*Berlandier*, 2265); South Mexico, dunes near the Pacific Ocean, Oaxaca (*Galeotti*, 3656).—Also in Peru. Hb. Kew.

16. **Passiflora fœtida,** Linn. Amœn. Acad. i. p. 288, t. 10.

Dr. Masters (Fl. Bras. xiii. pars 1, p. 582) defines several varieties, of which the following extend to Central America or Mexico:—

Var. **gossypifolia,** Desf. (species); Bot. Reg. t. 1634; Bot. Mag. t. 2619.

North Mexico, Zacatecas (*Hartweg*); South Mexico, between Chila and Huanapan, Puebla and Oaxaca (*Andrieux*, 367), Zimapan (*Coulter*), 61.

Var. **ciliata,** Ait. (species); Bot. Mag. t. 288.

Nicaragua, neighbourhood of Granada (*Levy*, 120).

Var. **hirsuta,** Linn. (species).

Panama, Chagres (*Fendler*, 117), Cruces (*Seemann*, 503).

Var. **hastata,** Bertol. (species).

South Mexico, Vera Cruz (*Linden*, 750), Mirador (*Linden*, 755); Guatemala (*Velasquez*). Hb. Kew.

A variable and widely dispersed species in the tropical and subtropical regions of America, and naturalized in some parts of the Old World.

17. **Passiflora glauca,** Ait. Hort. Kew. iii. p. 308; Jacq. Hort. Schœnb. t. 384.

South Mexico, without special locality (*Hahn*).—Venezuela; Colombia.

18. **Passiflora hahnii,** Mast. in Fl. Bras. xiii. pt. 1, p. 569.

Distemma hahnii, Rev. Hort. 1869, p. 430, cum icone.

Mexico (*Hahn*).

19. **Passiflora helleri,** Peyr. in Linnæa, xxx. p. 54.

South Mexico, Mirador, 3000 feet (*Heller*).

20. **Passiflora hispidula,** Knowles et Westcott, Bot. Cab. iii. t. 126.

Mexico?

21. **Passiflora holosericea,** Linn. Amœn. Acad. i. p. 226; Bot. Mag. t. 2015; Bot. Reg. t. 59.

Mexico (*Hahn*, *Liebmann*, and others). Hb. Kew.

22. **Passiflora inamœna,** A. Gray, Pl. Wright. ii. p. 59.

New Mexico.—North Mexico, Sonora (*Wright*); South Mexico, region of Orizaba, Rio Blanco (*Bourgeau*, 3263). Hb. Kew.

23. **Passiflora jorullensis,** H. B. K. Nov. Gen. et Sp. ii. p. 133.

Passiflora medusæa, Lem. in Fl. des Serres, v. t. 528; Bot. Mag. t. 4752.

South Mexico, Jorullo (*Bonpland*), Mazatlan (*Seemann*, 1516), without habitats (*Pavon & Karwinski*). Hb. Kew.

24. **Passiflora karwinskii,** Mast. in Fl. Bras. xiii. pt. 1, p. 555.

Mexico (*Karwinski*). Sketch only in hb Kew.

25. **Passiflora laurifolia,** Linn. Sp. Pl. ii. p. 1356; Jacq. Hort. Vindob. ii. t. 102; Bot. Reg. t. 13.

Mexico, Tepinapa and Lacoba (*Liebmann*).—Brazil and northern parts of South America. Also commonly cultivated for its fruit. Hb. Kew.

26. **Passiflora liebmannii,** Mast. in Fl. Bras. xiii. pt. 1, p. 547.

South Mexico, Venta Salada (*Liebmann*). Sketch only in hb. Kew.

27. **Passiflora ligularis,** Juss. in Ann. Mus. Par. vi. t. 40; Bot. Mag. t. 2967.

Passiflora lowei, Heer in Regel's Gartenflora, 1852, t. 9.

Passiflora serratistipula, DC. Prodr. iii. p. 328; Calques des Dess. Fl. Mex. 31?

South Mexico, without locality (*Galeotti*, 3668); Costa Rica, without locality (*Œrsted*), wild in various parts (*Polakowsky*).—Colombia; Ecuador. Hb. Kew.

28. **Passiflora lunata,** Willd. Sp. Pl. iii. p. 612; Sm. Ic. Pict. i. t. 1.

Passiflora glabrata, H. B. K.

South Mexico, valley of Cordova (*Bourgeau*, 2099); Nicaragua, Chontales (*Tate*, 33); Costa Rica (*Œrsted*); Panama, Chagres (*Fendler*, 121; *Sinclair*). Hb. Kew.

Var. **costata,** Mast. in Fl. Bras. xiii. pt. 1, p. 552.

Guatemala (*Friedrichsthal*).—Jamaica; Venezuela; Colombia. Hb. Kew.

29. **Passiflora maximiliana,** Bory in Ann. Sc. Phys. Gen. ii. p. 149, t. 24.

Passiflora vespertilio, Bot. Reg. t. 597, nec Linn.

Passiflora discolor, Lodd. Bot. Cab. t. 565.

Panama, Bujio railway-station (*S. Hayes*, 356).—Brazil. Hb. Kew.

30. **Passiflora membranacea,** Benth. Pl. Hartw. p. 83.

South Mexico, Chiapas (*Ghiesbreght*, 113); Guatemala, in the mountains near the town of Old Guatemala (*Hartweg*). Hb. Kew.

31. **Passiflora mexicana,** Juss. in Ann. Mus. vi. p. 108, t. 38. fig. 2.

North Mexico, Tubac, Sonora (*Wright*); South Mexico, near Acapulco (*Bonpland, Karwinski*).

32. **Passiflora multiflora,** Linn. Amœn. Acad. i. p. 221, t. 10. fig. 7; Cav. Diss. x. t. 272.

Costa Rica, without more precise locality (*Œrsted*).—West Indies.

33. **Passiflora œrstedii,** Mast. in Fl. Bras. xiii. pt. 1, p. 562.

Costa Rica, Mount Aguacate (*Œrsted*).

34. **Passiflora pallens,** Pœpp. MSS. ex Mast. in Fl. Bras. xiii. pt. 1, p. 567.

Guatemala, Rio Guacalate, 4950 feet (*Salvin*).—Cuba; Venezuela. Hb. Kew.

35. **Passiflora pannosa,** Sim in Rees's Cyclop. 1819, n. 28.

South Mexico, Jalisco (*Beechey*). Hb. Kew.

36. **Passiflora pilosa,** Ruiz et Pav. in DC. Prodr. iii. p. 330.

Nicaragua, Chontales (*Tate*, 149).—Colombia. Hb. Kew.

37. **Passiflora pulchella,** H. B. K. Nov. Gen. et Sp. ii. p. 134.

Passiflora divaricata, Griseb.

Panama, Chagres (*Fendler*, 2330), near the city of Panama (*S. Hayes*, 92).—Venezuela; Colombia. Hb. Kew.

38. **Passiflora quadriglandulosa,** Rodschied, Obs. p. 77; Mast. loc. cit. p. 607.

Tacsonia sanguinea, DC. Prodr. iii. p. 334; Bot. Mag. t. 4674.

Panama, Manzanilla (*Billberg*).—Trinidad; Guiana; Brazil.

39. **Passiflora quadrangularis,** Linn. Syst. p. 1248; Jacq. Am. t. 143; Bot. Reg. t. 14.

Guatemala (*Friedrichsthal*); Nicaragua, Chontales (*Tate*, 416); Panama, Chagres (*Fendler*, 119). Hb. Kew.

This species is almost universally cultivated in Tropical America; but Tate states that it is truly wild in Nicaragua.

40. **Passiflora reflexiflora,** Cav. Ic. v. t. 425; Mast. loc. cit. p. 569.

Tacsonia reflexiflora, Juss.

Tacsonia lævis, Benth.

South Mexico, region of Orizaba (*Bourgeau*, 2437); Guatemala (*Hartweg*, 662).—Peru. Hb. Kew.

41. **Passiflora rubra,** Linn. Amœn. Acad. i. p. 222, t. 10. fig. 9; Jacq. Ic. Rar. i. t. 186.

Panama, without habitat (*Sinclair*).—West Indies and southward to Peru and Brazil. Hb. Kew.

42. **Passiflora seemannii,** Griseb. in Bonplandia, 1858, p. 7.

Panama, Chagres (*Fendler*, 120; *Wagner*). Hb. Kew.

43. **Passiflora serratifolia,** Linn. Amœn. Acad. i. p. 217, t. 10. fig. 1; Bot. Mag. t. 651.

South Mexico, Teapa (*Linden*, 854), Vera Cruz (*Houston*), without precise localities (*Jurgensen*, 934; *Liebmann*, 75–82; *Linden*, 894; *Karwinski*).—Guiana. Hb. Kew.

44. **Passiflora sexflora,** Juss. in Ann. Mus. vi. t. 37. fig. 1.

Passiflora floribunda, Lem. Fl. des Serres, t. 335.

South Mexico, Santa Cruz (*Liebmann*, 38), region of Orizaba (*Bourgeau*, 3279; *Jurgensen*, 796).—West Indies. Hb. Kew.

45. **Passiflora sicyoides,** Ch. et Schl. Linnæa, v. p. 89; Mast. in Fl. Bras. xiii. pt. 1, p. 591.

Passiflora odora, Link et Otto, Ic. Pl. Rar. Hort. Bot. Berol. p. 93, t. 47.

South Mexico, Zimapan (*Coulter*, 62, 63), around Oaxaca (*Andrieux*, 369).—Also in South Brazil. Hb. Kew.

46. **Passiflora spathulata,** Mast. in Fl. Bras. xiii. pt. 1, p. 552.

Mexico (*Liebmann*, 13, 14).

47. **Passiflora suberosa,** Linn. Amœn. Acad. i. p. 226; Jacq. Hort. Vindob. t. 163.

Dr. Masters (Fl. Bras. xiii. pt. 1, p. 579) distinguishes six varieties; but only two or three of them reach Central America.

Var. **minima,** Mast. loc. cit.

Mexico, common (ex *Masters*).—West Indies.

Var. **hirsuta,** Mast. loc. cit.

South Mexico, Zimapan (*Coulter*, 58, 59), Mirador (*Linden*, 751).

Subvar. **argentea,** Mast. loc. cit.

Mexico, Tehuacan (*Galeotti*, 3663). Hb. Kew.

A variable and widely spread species in Tropical America.

48. **Passiflora tuberosa,** Jacq. Hort. Schœnb. iv. p. 49, t. 496; Bot. Reg. t. 432.

South Mexico, near Vera Cruz (*Hahn*).—West Indies and Guiana.

49. **Passiflora viridiflora,** Cav. Ic. v. t. 424; Mast. in Fl. Bras. xiii. pt. 1, p. 558.

Tacsonia viridiflora, Juss.

Passiflora tubiflora, H. B. K.

South Mexico, Acapulco (*Bonpland*, *Beechey*, *Liebmann*). Hb. Kew.

50. **Passiflora vitifolia,** H. B. K. Nov. Gen. et Sp. ii. p. 138.

Tacsonia buchanani, Lem. Ill. Hort. t. 519.

NICARAGUA, Chontales (*Tate*, 169; *Seemann*, 23); PANAMA, Cruces, Gorgona, San Juan, &c. (*Seemann*), Chagres (*Fendler*, 118; *Sinclair*; *Hinds & Cuming*).—This has a wide range in TROPICAL SOUTH AMERICA. Hb. Kew.

51. **Passiflora,** sp. (*P. capsulari* aff.).

COSTA RICA (*Endres*, 70). Hb. Kew.

Tribe PAPAYEÆ.

As limited by Bentham and Hooker, this tribe consists of two genera and about twenty-five species, all restricted to America.

2. CARICA.

Carica, Linn. Gen. Plant. n. 1127; Benth. et Hook. Gen. Plant. i. p. 815.

Trees or shrubs. About twenty species, widely spread in Tropical America.

1. **Carica boissieri,** Hemsl.

Vasconcellea boissieri, A. DC. Prodr. xv. pars 1, p. 415.

MEXICO (*Pavon*). Hb. Boissier.

2. **Carica nana,** Benth. Pl. Hartw. p. 288.

SOUTH MEXICO, near Leon (*Hartweg*). Hb. Kew.

3. **Carica peltata,** Hook. et Arn. Bot. Beech. Voy. p. 425, t. 98.

Vasconcellea peltata, A. DC. Prodr. xv. pars 1, p. 416.

NICARAGUA, Realejo (*Sinclair*). Hb. Kew.

4. **Carica papaya,** Linn. Sp. Pl. p. 1466.

Papaya vulgaris, DC. in Lam. Dict. v. p. 2.

SOUTH MEXICO, Chila, Puebla (*Andrieux*, 371), in woods about Papantla (*Schiede & Deppe*), valley of Cordova (*Bourgeau*, 2324); NICARAGUA, Realejo (*Beechey*). Hb. Kew.

A native of Tropical America, and now widely dispersed, though in many places it occurs only as a waif of cultivation. It is also cultivated and naturalized in other warm countries.

5. **Carica,** sp.

SOUTH MEXICO, valley of Cordova (*Bourgeau*). Hb. Kew.

6. **Carica,** sp.

NICARAGUA, neighbourhood of Granada (*Levy*, 1017). Hb. Kew.

3. JACARATIA.

Jacaratia, A. DC. Prodr. xv. pars 1, p. 419; Benth. et Hook. Gen. Plant. i. p. 815.

Small trees. Four or five species, inhabiting Brazil, Guiana, and Mexico.

1. **Jacaratia mexicana,** A. DC. Prodr. xv. pars 1, p. 420.
MEXICO (*Moçino*).

Order LXII. CUCURBITACEÆ.

Cucurbitaceæ, Benth. et Hook. Gen. Plant. i. p. 816.

About 530 species, in seventy-five genera. They are herbaceous or rarely woody plants, generally inhabiting warm countries, and most abundant in tropical regions*.

[The following Old-World Cucurbitaceæ are cultivated in Central America and Mexico, and more or less naturalized:—*Citrullus vulgaris*, Schrad.; *Cucumis melo*, Linn.; *Cucumis sativa*, Linn.; *Lagenaria vulgaris*, Ser.; *Cucurbita maxima*, Duch.; *Luffa ægyptiaca*, Mill.; *Luffa acutangula*, Roxb.]

Tribe CUCUMERINEÆ.

1. MOMORDICA.

Momordica, Linn. Gen. Plant. n. 1090; Benth. et Hook. Gen. Plant. i. p. 825.

About twenty-six species, principally restricted to the Old World. Some botanists regard the following species as really indigenous in some parts of the New World:—

1. **Momordica balsamina,** Linn. Sp. Pl. p. 1433; Lam. Ill. t. 794. fig. 1.
A native of most tropical countries of the OLD WORLD, introduced into America, where it has become wild. Hb. Kew.

2. **Momordica charantia,** Linn. Sp. Pl. p. 1433; Bot. Mag. t. 2455.
Common, and possibly indigenous, in Tropical America, from MEXICO to BRAZIL, though it may have been originally introduced from the Old World, where it abounds nearly throughout the tropics. Hb. Kew.

2 LUFFA.

Luffa, Cav. Ic. i. p. 7; Benth. et Hook. Gen. Plant. i. p. 823.

About ten species, dispersed in tropical countries.

* Prof. A. Cogniaux, who has studied the collections at Kew for the purposes of his monograph of the order, has kindly revised the synonymy, in part, of this enumeration.

1. **Luffa operculata,** Cogn. in Mart. Fl. Bras. fasc. lxxviii. p. 12.

Luffa quinquefida, Seem. Bot. Voy. 'Herald,' p. 285.
Elaterium quinquefidum, Hook. et Arn. Bot. Beech. Voy. p. 292.
Momordica quinquefida, Hook. et Arn. loc. cit. p. 424.

South Mexico, Acapulco (*Lay, Collie & Sinclair*); Central America (*Œrsted*, 66).—Widely dispersed in Tropical South America. Hb. Kew.

3. CUCUMIS.

Cucumis, Linn. Gen. Plant. n. 1092; Benth. et Hook. Gen. Plant. i. p. 826.

About twenty-five species, generally diffused in the tropics, but most numerous in Africa and Asia.

1. **Cucumis anguria,** Linn. Sp. Pl. p. 1446; Descourt. Fl. Med. Antill. v. p. 97, t. 329.

Florida; Texas.—Central America (ex *Cogniaux*).—West Indies and Colombia to Brazil.

2. **Cucumis campechianus,** H. B. K. Nov. Gen. et Sp. ii. p. 122.

South Mexico, coast of Campeche (*Humboldt & Bonpland*). Hb. Kew.
Cogniaux, we believe, regards this as a variety of *C. melo*.

4. CUCURBITA.

Cucurbita, Linn. Gen. Plant. n. 1091; Benth. et Hook. Gen. Plant. i. p. 828.

About ten or twelve species, inhabiting the warm parts of Asia, Africa, and America.

1. **Cucurbita digitata,** A. Gray, Pl. Wright. ii. p. 60.

New Mexico.—North Mexico, valleys among the mountains of Sonora (*Schott*). Hb. Kew.

2. **Cucurbita perennis,** A. Gray, Pl. Lindh. ii. p. 193.

Cucumis ? perennis, James in Long's Exped. ii. p. 345.
Cucumis fœtidissima, H. B. K. Nov. Gen. et Sp. ii. p. 123.

Rocky Mountains to Texas.—South Mexico, very common around Guanaxuato, at about 6500 feet (*Humboldt & Bonpland*).

3. **Cucurbita radicans,** Naud. in Ann. Sc. Nat. sér. 5, vi. p. 8.

South Mexico, valley of Cordova (*Bourgeau*, 1610). Hb. Kew.

5. PEPONOPSIS.

Peponopsis, Naud. in Ann. Sc. Nat. sér. 4, xii. p. 88; Benth. et Hook. Gen. Plant. i. p. 829.

The genus is at present limited to the following species:—

1. **Peponopsis adhærens,** Naud. in Ann. Sc. Nat. sér. 4, xii. p. 89.
MEXICO ?

2. **Peponopsis,** sp.
SOUTH MEXICO, Wartenberg, near Tantoyuca (*Ervendberg*, 354). Hb. Kew.

6. MELOTHRIA.

Melothria, Linn. Gen. Plant. n. 50 ; Benth. et Hook. Gen. Plant. i. p. 830.

About thirty species, generally dispersed in the tropics.

1. **Melothria scabra,** Naud. in Ann. Sc. Nat. sér. 5, vi. p. 10.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1614), Cuernavaca, Iturbide (*Bourgeau*, 1387), Jalapa (*Galeotti*, 1182*). Hb. Kew.

2. **Melothria,** sp.
SOUTH MEXICO, Zimapan (*Coulter*, 42). Hb. Kew.

3. **Melothria ?,** sp.
MEXICO (*Hahn*, 1). Hb. Kew.

4. **Melothria ?,** sp.
PANAMA, Chagres (*Fendler*, 124). Hb. Kew.

[*M. pervaga*, Griseb. (Fl. Brit. W. Ind. p. 289), it is stated, inhabits Mexico ; and probably some of the foregoing numbers belong to it.]

7. ANGURIA.

Anguria, Linn. Gen. Plant. n. 1037 ; Benth. et Hook. Gen. Plant. i. p. 833.

The genus is exclusively American. Cogniaux, in his recent 'Diagnoses de Cucurbitacées Nouvelles,' enumerates sixteen species.

1. **Anguria longipedunculata,** Cogn. Diag. Cucurb. Nouv. fasc. i. p. 21.
SOUTH MEXICO, near Catemaco (*Galeotti*).

2. **Anguria pedata,** Linn. Sp. Pl. p. 1376 ; Jacq. Amer. t. 155.
PANAMA, near the city of Panama (*Seemann*, 109),—WEST INDIES.

3. **Anguria umbrosa,** H. B. K. Nov. Gen. et Sp. ii. p. 121.
MEXICO ; CENTRAL AMERICA (ex *Cogniaux*). — COLOMBIA ; VENEZUELA ; GUIANA ; BRAZIL.

4. **Anguria warscewiczii,** Hook. Bot. Mag. t. 5304.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1687), Mirador (*Linden*, 437), Jalapa,

3000 feet (*Galeotti*, 7095); NICARAGUA, Chontales (*Tate*, 287); PANAMA, Barbacoas railway-station (*S. Hayes*, 128), outskirts of woods (*Seemann*).—VENEZUELA. Hb. Kew.

5. **Anguria,** sp.

COSTA RICA (*Endres*, 198). Hb. Kew.

8. GURANIA.

Gurania, Cogn. Diag. Cucurb. Nouv. fasc. i. p. 13.

Cogniaux separates, under this name, a number of species referred by previous botanists to *Anguria*. He enumerates forty-seven species, all inhabiting Tropical America, chiefly the western parts.

1. **Gurania coccinea,** Cogn. Diag. Cucurb. Nouv. fasc. i. p. 42.

PANAMA, Chagres (*Fendler*, 125). Hb. Kew.

2. **Gurania costaricensis,** Cogn. Diag. Cucurb. Nouv. fasc. i. p. 37.

COSTA RICA (*Œrsted*, *Warszewicz*).

3. **Gurania levyana,** Cogn. Diag. Cucurb. Nouv. fasc. i. p. 26.

NICARAGUA, Chontales, 2000 feet (*Levy*, 468; *Tate*, 107, 108, and 275); PANAMA, Chagres (*Fendler*, 126). Hb. Kew.

4. **Gurania makoyana,** Cogn. Diag. Cucurb. Nouv. fasc. i. p. 17.

Anguria makoyana, Lem. Fl. des Serres, iii. t. 222.

GUATEMALA.

5. **Gurania seemanniana,** Cogn. Diag. Cucurb. Nouv. fasc. i. p. 35.

Anguria eriantha, Seem. Bot. Voy. 'Herald,' p. 127, nec Poepp. et Endl.

PANAMA, near Cruces (*Seemann*, 504), Empire railway-station (*S. Hayes*, 134). Hb. Kew.

6. **Gurania wageneriana,** Cogn. Diag. Cucurb. Nouv. fasc. i. p. 17.

Anguria wageneriana, Schl. in Linnæa, xviii. p. 785.

MEXICO.—COLOMBIA.

9. SICYDIUM.

Sicydium, A. Gray in Bost. Journ. Nat. Hist. vi. p. 194; Benth. et Hook. Gen. Plant. i. p. 833.

Two or three species in Texas and Mexico.

1. **Sicydium lindheimeri,** A. Gray, Pl. Lindh. ii. p. 194.

TEXAS; NEW MEXICO.—NORTH MEXICO, mountains of Sonora (*Schott*), between Leon and the Rio Grande (*Bigelow*), Cerralvo (*Wislizenus*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 260). Hb. Kew.

10. APODANTHERA.

Apodanthera, Arn. in Hook. Journ. Bot. iii. p. 274; Benth. et Hook. Gen. Plant. i. p. 834.

About twelve species, ranging from Mexico to Peru.

1. **Apodanthera aspera,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 43.
South Mexico, Oaxaca (*Liebmann*, 56).

2. **Apodanthera buræavi,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 44.
South Mexico (*Andrieux*, 175). Hb. Kew.

3. **Apodanthera galeottii,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 45.
South Mexico, barren fields of the tableland of Puebla, 5500 feet (*Galeotti*, 1886*). Hb. Kew.

4. **Apodanthera gracilis,** Benth. Bot. Voy. Sulph. p. 99.
Texas.—South Mexico, Jalapa, 3000 to 4000 feet (*Galeotti*, 1884); Panama, in hedges near the city of Panama (*Seemann*, 451), Isle of Taboga (*Sinclair*), Chagres (*Fendler*, 123; *S. Hayes*, 202).—Colombia; Ecuador. Hb. Kew.

5. **Apodanthera? undulata,** A. Gray, Pl. Wright. ii. p. 60.
New Mexico; Arizona.—North Mexico, Santa Cruz, Sonora (*Schott*, *Thurber*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 262). Hb. Kew.

Tribe ABOBREÆ.

11. TRIANOSPERMA.

Trianosperma, Mart. Syst. Mat. Med. Bras. p. 79; Benth. et Hook. Gen. Plant. i. p. 835.

About fifteen species—one indigenous in West Tropical Africa, and all the rest in Tropical America.

1. **Trianosperma attenuata,** Hemsley.
Bryonia attenuata, Hook. et Arn. Bot. Beech. Voy. p. 424.
South America, Acapulco (*Sinclair*, *Beechey*); Guatemala, Mazatenango (*Bernoulli*, 1206). Hb. Kew.

2. **Trianosperma racemosa,** Hemsley.
Bryonia racemosa, Mill. Dict. ex Sw. Fl. Ind. Occ. ii. p. 1148; Plum. Descr. t. 97; Descourt. Fl. Med. Antill. ii. t. 136.
Cionandra racemosa, Griseb. Fl. Brit. West Ind. p. 286.
South Mexico, valley of Cordova (*Bourgeau*, 1616, 1968).—West Indies.

Tribe ELATERIEÆ.

12. ECHINOCYSTIS.

Echinocystis, Torr. et Gray, Fl. N. Am. i. p. 542; Benth. et Hook. Gen. Plant. i. p. 835.

About twenty species, inhabiting America from Canada to the southern tropic.

1. **Echinocystis coulteri,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 88.

Elaterium? coulteri, A. Gray, Pl. Wright. ii. p. 61.

Echinopepon horridus, Naud. in Ann. Sc. Nat. sér. 5, vi. p. 19.

North Mexico, Zacatecas (*Coulter*, 51); South Mexico, Orizaba (*Botteri*, 573), Escamela region of Orizaba (*Bourgeau*, 3266).—Central America. Hb. Kew.

2. **Echinocystis floribunda,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 89.

South Mexico, Comaltepec (*Liebmann*), Oaxaca (*Liebmann*), Oaxaca, 5000 feet (*Galeotti*, 1890). Hb. Kew.

3. **Echinocystis gemella,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 88.

Elaterium gemellum, Ser. in DC. Prodr. iii. p. 310; DC. Calques des Dess. Fl. Mex. xxxviii. fig. B.

Sicyos eremocarpus, Peyritsch in Linnæa, xxx. p. 56, non Schauer.

South Mexico, without locality (*Moçino & Sessé*), in the warmer region near San Angel, Cuernavaca (*Schaffner*, 30). Hb. Kew.

4. **Echinocystis glutinosa,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 92.

Mexico, cultivated in the Jardin des Plantes at Paris from seeds sent thither by Bourgeau. Hb. Paris.

5. **Echinocystis lanata,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 92.

South Mexico, Guatulco (*Liebmann*, 49).

6. **Echinocystis longispina,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 91.

South Mexico, Jorullo (*Schiede*, 1080).

7. **Echinocystis milleflora,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 88.

Echinopepon milleflorus, Naud. in Ann. Sc. Nat. sér. 5, vi. p. 18.

South Mexico, mountain-valleys near the city of Mexico (*Bourgeau*). Hb. Paris.

8. **Echinocystis paniculata,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 90.

South Mexico, Sola (*Galeotti*).

9. **Echinocystis pubescens,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 88.

Elaterium pubescens, Benth. Pl. Hartw. p. 6.

North Mexico, Zacatecas (*Hartweg*, 15). Hb. Kew.

10. **Echinocystis torquata,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 88.

Elaterium torquatum, Ser. in DC. Prodr. iii. p. 310; DC. Calques des Dess. Fl. Mex. xxxviii. fig. C.

Echinopepon quinquelobatus, Naud. in Ann. Sc. Nat. sér. 5, vi. p. 19.

Sicyos gymnacanthus, Griseb. in Schaffner, Pl. Mex. n. 28.

Mexico, without locality (*Moçino & Sessé*), valley of Mexico (*Bourgeau*, 1060). Hb. Kew.

11. **Echinocystis wrightii,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 88.

Elaterium? wrightii, A. Gray, Pl. Wright. i. p. 61.

New Mexico.—North Mexico, Magdalena, Sonora (*Thurber*), Guadalupe Pass (*Wright*); South Mexico, Guadalupe, valley of Mexico (*Bourgeau*, 789). Hb. Kew.

13. ELATERIUM.

Elaterium, Linn. Gen. Plant. n. 1036; Benth. et Hook. Gen. Plant. i. p. 835.

An exclusively American genus, consisting of about twenty species, inhabiting Mexico and the northern part of South America.

1. **Elaterium carthaginense,** Linn. Sp. Pl. p. 1375.

PANAMA (*Duchassaing*).—TROPICAL SOUTH AMERICA.

2. **Elaterium ciliatum,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 54.

GUATEMALA, Volcan de Agua (*Œrsted*), Mazatenango (*Bernoulli*); COSTA RICA, Ujaras (*Œrsted*).

3. **Elaterium filiforme,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 53.

SOUTH MEXICO, San Carlos (*Liebmann*, 29, 30).

4. **Elaterium gracile,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 51.

Rhytidostylis gracilis, Hook. et Arn. Bot. Voy. Beech. p. 424, t. 97, A.

SOUTH MEXICO, woods near the Pacific Ocean, Oaxaca (*Galeotti*, 1589); GUATEMALA, Mazatenango (*Bernoulli*, 1186); NICARAGUA, Realejo (*Sinclair*); COSTA RICA, at 3500 feet (*Endres*, 5); PANAMA, near Frijoli railway-station (*S. Hayes*, 139), near the city of Panama (*Seemann*, 112).—COLOMBIA. Hb. Kew.

5. **Elaterium longiflorum,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 54.

PANAMA (*Duchassaing, Wagner*). Hb. Paris.

6. **Elaterium quadrifidum,** Ser. in DC. Prodr. iii. p. 310.

MEXICO.

14. HANBURIA.

Hanburia, Seem. Bonpl. 1858, p. 293; Benth. et Hook. Gen. Plant. i. p. 836.

The genus is restricted to Mexico.

1. **Hanburia mexicana,** Seem. Bonplandia, 1858, p. 293; 1859, p. 2; 1862, p. 189, t. 12.

SOUTH MEXICO, near Cordova (*Finck*; *Bourgeau*, 1832), region of Orizaba (*Bourgeau*, 2426). Hb. Kew.

15. CYCLANTHERA.

Cyclanthera, Schrader, Ind. Sem. Hort. Gœtt. et in Linnæa, xii. p. 408; Benth. et Hook. Gen. Plant. i. p. 836.

An American genus of thirty-two known species, ranging from Texas and New Mexico to Peru and Brazil.

1. **Cyclanthera bourgæana,** Naud. in Ann. Sc. Nat. sér. 5, vi. p. 17.

MEXICO (*Bourgeau*).

2. **Cyclanthera brachystachya,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 64.

Elaterium brachystachyum, Ser. in DC. Prodr. iii. p. 310; DC., Calques des Dess. Fl. Mex. xxxviii. fig. F.

MEXICO (*Moçino & Sessé*).

3. **Cyclanthera costaricensis,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 73.

COSTA RICA, San José (*Œrsted*, 23).

Var. β. **angustiloba,** Cogn. loc. cit.

COSTA RICA, Ujaras (*Œrsted*, 24).

4. **Cyclanthera dissecta,** Arn. in Hook. Journ. Bot. iii. p. 280.

Echinocystis pedata, Scheele in Linnæa, xxi. p. 587.

Discanthera dissecta, Torr. & Gray, Fl. N. Am. i. p. 697.

TEXAS; NEW MEXICO.—NORTH MEXICO, Puerto de Paysano, Sonora (*Bigelow*); SOUTH MEXICO, region of Orizaba (*Bourgeau*, 3049; *Müller*), Zacoalco, valley of Mexico (*Bourgeau*, 786), Zimapan (*Coulter*, 46); PANAMA, around the city of Panama (*Seemann*). Hb. Kew.

5. **Cyclanthera eremocarpa,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 63.

Sicyos eremocarpus, Schauer in Linnæa, xx. p. 722.

SOUTH MEXICO, valley of Mexico (*Bourgeau*, 784, 787), Guadalupe (*Bilimek*, 149), Toluca, Cocustepec, 8800 feet (*Heller*), without locality (*Aschenborn*, 325). Hb. Kew.

6. **Cyclanthera explodens,** Naud. in Ann. Sc. Nat. sér. 4, xii. p. 161.

SOUTH MEXICO, Orizaba (*Botteri*, 563).—VENEZUELA; COLOMBIA. Hb. Kew.

7. **Cyclanthera filifera,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 72.

GUATEMALA, Mazatenango (*Bernoulli*, 1201). Hb. Kew.

8. **Cyclanthera gracillima,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 71.

SOUTH MEXICO, Guatulco (*Liebmann*, 43, 65).

9. **Cyclanthera hastata,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 64.

Elaterium hastatum, H. B. K. Nov. Gen. et Sp. ii. p. 120.

SOUTH MEXICO, near Pazcuaro, and on the slopes of the Volcan de Jorullo, 3250 to 6775 feet (*Humboldt & Bonpland*).

10. **Cyclanthera integrifoliola,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 65.

SOUTH MEXICO, near Morelia, 6000 to 7500 feet (*Galeotti*, 7201), Zimapan (*Coulter*, 48).

Var. β. **angustifolia,** Cogn. loc. cit.

SOUTH MEXICO, Regla, 6000 feet (*Galeotti*, 1901 bis). Hb. Kew.

11. **Cyclanthera langæi,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 67.

SOUTH MEXICO, region of Orizaba (*Bourgeau*, 3049). Hb. Kew.

12. **Cyclanthera multifoliola,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 66.

SOUTH MEXICO, shores of the Pacific (*Galeotti*, 1889, 1889*), San Augustin (*Liebmann*). Hb. Kew.

13. **Cyclanthera pedata,** Schrad. Ind. Sem. Hort. Gœtting. 1831, et in Linnæa, viii. Litteratur-Bericht, p. 23.

Momordica pedata, Linn.

South Mexico, region of Orizaba (*Bourgeau*, 3265; *Botteri*, 562); Guatemala, Mazatenango (*Bernoulli*, 1201).—Colombia and Venezuela to Peru. Hb. Kew.

14. **Cyclanthera ribiflora,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 63.

Elaterium ribiflorum, Schl. in Linnæa, vii. p. 388.

Elaterium biflorum, Dietr. Syn. Pl. v. p. 372.

South Mexico, Zimapan (*Coulter*, 47), Pacific coast, Oaxaca, at 4000 to 6000 feet (*Galeotti*, 1888), common around Belen, Tacubaya (*Schaffner*, 29), near Hacienda de la Laguna (*Schiede*). Hb. Kew.

15. **Cyclanthera tamnoides,** Cogn. Diag. Cucurb. Nouv. fasc. ii. p. 64.

Elaterium tamnoides, Willd. Enum. Pl. Hort. Berol. p. 950.

Mexico?

Tribe SICYOIDEÆ.

16. SICYOS.

Sicyos, Linn. Gen. Plant. n. 1094; Benth. et Hook. Gen. Plant. i. p. 837.

About twenty species, inhabiting the warmer parts of America, the Pacific Islands, and Australia.

1. **Sicyos angulatus,** Linn. Sp. Pl. p. 1438.

Canada and New York, southward to—South Mexico, valley of Mexico (*Bourgeau*, 45), near Tantoyuca (*Ervendberg*); Panama, common (*Seemann*, 110; *S. Hayes*, 210). Hb. Kew.

2. **Sicyos depauperatus,** Naud. in Ann. Sc. Nat. sér. 5, vi. p. 23.

South Mexico, among bushes near Santa Fé in the valley of Mexico (*Bourgeau*, 973). Hb. Kew.

3. **Sicyos deppei,** Don, Gen. Syst. iii. p. 34.

Sicyos bourgeanus, Naud. in Ann. Sc. Nat. sér. 5, vi. p. 22.

South Mexico, near Jalapa (*Schiede & Deppe*), Orizaba (*Botteri*, 564), valleys of Mexico and Cordova (*Bourgeau*, 45, 1611). Hb. Kew.

4. **Sicyos microphyllus,** H. B. K. Nov. Gen. et Sp. ii. p. 119.

South Mexico, Volcan de Jorullo (*Humboldt & Bonpland*).

5. **Sicyos parviflorus,** Willd. Sp. Pl. iv. p. 626.

New Mexico.—North Mexico; South Mexico, Chiquihuita, valley of Mexico (*Bourgeau*, 1058), Real del Monte (*Coulter*, 50). Hb. Kew.

6. **Sicyos parvifolius,** A. Gray ex Naud. in Ann. Sc. Nat. sér. 5, vi. p. 22.
South Mexico (*Bourgeau*).

7. **Sicyos vitifolius,** Hook. et Arn. Bot. Beech. Voy. p. 292.
South Mexico, Tepic (*Lay*). Hb. Kew.

17. SICYOSPERMA.

Sicyosperma, A. Gray, Pl. Wright. ii. p. 62; Benth. et Hook. Gen. Plant. i. p. 837.

Monotypic.

1. **Sicyosperma gracile,** A. Gray, Pl. Wright. ii. p. 62.
North Mexico, Santa Cruz, Sonora (*Wright*). Hb. Kew.

18. SECHIUM.

Sechium, P. Browne, Nat. Hist. Jam. t. 355; Benth. et Hook. Gen. Plant. i. p. 837.

Bentham and Hooker limit the genus to *S. edule*, a commonly cultivated plant in warm countries.

1. **Sechium edule,** Sw. Fl. Ind. Occ. ii. p. 1150.
Sechium chayota, Jacq. Amer. t. 163.
South Mexico, Santa Anita near Mexico (*Bourgeau*, 626), Orizaba (*Botteri*, 574), valley of Cordova (*Bourgeau*, 1698); Panama, without locality (*Seemann*).—West Indies and Tropical South America. Hb. Kew.

19. TRICERATIA.

Triceratia, A. Rich. Fl. Cub. p. 614; Benth. et Hook. Gen. Plant. i. p. 838.

Besides the following, there is a doubtful species, the *Fevillea monosperma* of the Fl. Flum. x. t. 103.

1. **Triceratia bryonioides,** A. Rich. Fl. Cub. p. 614, t. 44. fig. 2.
Fevillea tamnifolia, H. B. K. Nov. Gen. et Sp. vii. t. 640.
Sicydium schiedeanum, Schl. in Linnæa, vii. p. 388.
South Mexico, dense forests of Teapa (*Linden*, 987), Hacienda de la Laguna (*Schiede*); Nicaragua, neighbourhood of Granada (*Levy*, 279); Panama (*S. Hayes*, 191).—West Indies and the northern parts of South America. Hb. Kew.

20. MICROSECHIUM.

Microsechium, Naud. in Ann. Sc. Nat. sér. 5, vi. p. 25; Benth. et Hook. Gen. Plant. i. p. 838.

Restricted to Mexico and Guatemala.

1. **Microsechium guatemalense,** Hemsley, Diag. Pl. Nov. pars 1, p. 16. (Tab. XXXI.)
Foliis asperis cordiformibus 5-partitis segmentis lateralibus patentibus cæteris duplo triplove

brevioribus, racemis masculis plurifloris quam folia duplo longioribus, floribus femininis sæpissime geminis sessilibus, pedunculis quam folia multo brevioribus, masculinis coaxillaribus. *Herba* alte scandens, ramulis gracilibus, angulatis. *Folia* petiolata, membranacea, scabrida, cordiformia, 5-partita, lamina ad $2\frac{1}{2}$–3 poll. diametro, segmentis acutissimis, lateralibus patentibus, cæteris duplo triplove brevioribus, sinibus inter segmenta rotundatis, petiolo ad sesquipollicari, cirris sæpissime tripartitis. *Flores* pilis albis longiusculis sparsis obsiti, monoici, utriusque sexus ex eadem axilla: masculini pedicellati, racemosi, racemis longissime pedunculatis; feminini sæpissime geminati et ad apicem pedunculi petiolum æquantis sessiles. *Flores* ♂ tetrameri, ad semipoll. diametro; calycis lobi subulati; corolla venosa; stamina 4, filamentis a basi liberis, antheris unilocularibus (vel stam. 2, antherarum loculis discretis, connectivo alte bifurco); ovarium rudimentarium nullum. *Flores* ♀ trimeri, masculinis minores; ovarium uniloculare, stylo gracili exserto, stigmate crasso trilobato. *Fructus* oblongus, tuberculato-spinosulus, ad 9 lin. longus.

Guatemala, ridge above Calderas, Volcan de Fuego, at 8300 feet (*Salvin*). Hb. Kew.

EXPLANATION OF TAB. XXXI.

Portion of plant, nat. size. Fig. 1, male flower unexpanded; 2, female flower expanded; 3, male flower expanded; 4, vertical section of unripe fruit.

2. **Microsechium ruderale,** Naud. in Ann. Sc. Nat. sér. 5, vi. p. 25.

Sicyos helleri, Peyr. in Linnæa, xxx. p. 56.

Sechium palmatum, DC. Calques des Dess. Fl. Mex. 355.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 261); South Mexico, region of Orizaba (*Bourgeau*, 2984, 3051), at 10,000 feet (*Galeotti*, 1895), at 9000 to 9800 feet (*Linden*, 435, 436), Jalapa (*Linden*, 433), woods of Oaxaca (*Galeotti*, 1880, 1887), near the city of Toluca, 8800 (*Heller*), Guadalupe, valley of Mexico (*Bourgeau*, 783), among bushes near the city of Mexico (*Bourgeau*, 621). Hb. Kew.

21. SECHIOPSIS.

Sechiopsis, Naud. in Ann. Sc. Nat. sér. 5, vi. p. 23; Benth. et Hook. Gen. Plant. i. p. 838.

The only species:—

1. **Sechiopsis triquetra,** Naud. in Ann. Sc. Nat. sér. 5, vi. p. 24.

Sicyos triqueter, Moç. et Sessé.

South Mexico, Cuernavaca, Iturbide (*Bourgeau*, 1198). Hb. Kew.

22. SCHIZOCARPUM.

Schizocarpum, Schrad. in Linnæa, vi. Litteratur-Bericht, p. 73; Benth. et Hook. Gen. Plant. i. p. 825.

This genus was not recognized by Bentham and Hooker; but Cogniaux has since been able to identify it by means of the type specimen. It is limited to the following species:—

1. **Schizocarpum filiforme,** Schrad. in Linnæa, vi. Litteratur-Bericht, p. 73.
SOUTH MEXICO, rocks of the eastern Cordillera of Oaxaca, at 7000 feet (*Galeotti*, 1891), without locality (*Parkinson*). Hb. Kew.
We have not ascertained the position of this genus.

CUCURBITACEÆ DUBIÆ.

1. **Sphenantha scabra,** Schrad. in Linnæa, xii. p. 416. "Ex descriptione a *Cucurbita* non differere videtur."—*Benth. et Hook.* Gen. Pl. i. p. 829.

2. **Polyclathra cucumerina,** Bertol. Fl. Guat. p. 38, t. 11, Esquintla (*Velasquez*), not mentioned by Bentham and Hooker, is the same, according to Cogniaux, as

Pentaclathra, Bertol. in Nov. Comm. Acad. Bonon. iv. p. 438, t. 46, "planta Guatemalensis pessime descripta, floribus ignotis dubia remanet."—*Benth. et Hook.* Gen. Pl. i. p. 820.

Order LXIII. BEGONIACEÆ.

Begoniaceæ, Benth. et Hook. Gen. Plant. i. p. 841; A. DC. Prodr. xv. pars 1, p. 266.

There are three genera, and nearly 400 species, of this family. With few exceptions they are herbaceous plants inhabiting the mountains of equatorial and subtropical countries. None has hitherto been detected in Australia or New Zealand.

1. BEGONIA.

Begonia, Linn. Gen. Plant. n. 1156; Benth. et Hook. Gen. Plant. i. p. 841.

Including *Mezierea* and *Casparya* (no species of which, however, occurs in our region), this genus embraces 390 species, much the larger number of which are American, extending from Mexico to Chili, but especially numerous in Mexico and Brazil.

1. **Begonia acutiloba,** Liebm. Mex. og Cent. Am. Beg. p. 13.
SOUTH MEXICO, towards Santiago, Amatlan, Oaxaca (*Liebmann*).

2. **Begonia angustifolia,** A. DC. Prodr. xv. pars 1, p. 307.
Begonia dentata, Pav. ined.
MEXICO (*Pavon*).

3. **Begonia anodæfolia,** A. DC. Prodr. xv. pars 1, p. 307.
SOUTH MEXICO, mountains near the Pacific Ocean, 6000 to 8000 feet (*Galeotti*, 191). Hb. Kew.

4. **Begonia balmisiana,** Ruiz, A. DC. Prodr. xv. pars 1, p. 308.
Begonia populifolia, H. B. K. Nov. Gen. et Sp. vii. t. 643.
SOUTH MEXICO, Pazcuaro (*Humboldt & Bonpland*); Toluca (*Heller*). Hb. Kew.

Var. β. **mitellifolia,** A. DC. loc. cit.

South Mexico, near Morelia, 6500 feet (*Galeotti*, 202). Hb. Kew.

5. **Begonia barkeri,** Knowles & Westcott, Flor. Cab. iii. p. 179, t. 135.

Mexico.

6. **Begonia biserrata,** Lindl. in Journ. Hort. Soc. ii. p. 313; Bot. Mag. t. 4746.

Guatemala, Volcan de Fuego, 5300 feet (*Salvin*). Hb. Kew.

7. **Begonia boissieri,** A. DC. Prodr. xv. pars 1, p. 311.

Mexico? (*Pavon*). Hb. Boissier.

8. **Begonia broussonnetiæfolia,** A. DC. Prodr. xv. pars 1, p. 340.

Guatemala (*Friedrichsthal*). Hb. Vindb.

9. **Begonia bulbillifera,** Link et Otto, Ic. Pl. Rar. p. 89, t. 45; Paxt. Fl. Gard. iii. p. 15, cum icone.

South Mexico, Cuaximalpo (*Karwinski*), without locality (*Bates*). Hb. Kew.

10. **Begonia cardiocarpa,** Liebm. Mex. og Cent. Am. Beg. p. 13.

Nicaragua, Mount Pantasmo, Segovia (*Ærsted*).

11. **Begonia caroliniæfolia,** Regel, Gartenflora, i. p. 259, t. 25.

Begonia rotata, Liebm.

South Mexico, valley of Cordova (*Bourgeau*, 1843); eastern Mexico (*Sumichrast*, 1597); Guatemala. Hb. Kew.

12. **Begonia carpinifolia,** Liebm. Mex. og Cent. Am. Beg. p. 20.

Costa Rica, Candelaria Mountains, 6000 feet (*Ærsted*).

13. **Begonia conchæfolia,** Dietr. Allg. Gartz. 1851, v. p. 258; Ref. Bot. t. 246.

Begonia scutellata, Liebm.

Costa Rica, Candelaria Mountains (*Ærsted*). Hb. Kew.

14. **Begonia crassicaulis,** Lindl. Bot. Reg. 1842, Misc. no. 21; ibid. t. 44.

Guatemala.

Raised in the Horticultural Society's garden from seeds sent home by Hartweg.

15. **Begonia crenatifolia,** A. DC. Prodr. xv. pars 1, p. 306.

South Mexico (*Galeotti*, 183).

16. **Begonia dealbata,** Liebm. Mex. og Cent. Am. Beg. p. 5.

South Mexico, Sierra of Oaxaca (*Liebmann*).

17. **Begonia decandra,** A. DC. Prodr. xv. pars 1, p. 288.

Mexico (*Pavon*). Hb. Boiss.

18. **Begonia donkelaariana,** Lem. Jard. Fleur. i. Misc. p. 34.

MEXICO?

Introduced into the nurseries at Ghent.

19. **Begonia falciloba,** Liebm. Mex. og Cent. Am. Beg. p. 15.

SOUTH MEXICO, rocks and damp places at 3000 feet, Cordillera of Oaxaca (*Galeotti*, 193; *Jurgensen*, 807). Hb. Kew.

20. **Begonia filipes,** Benth. Bot. Voy. Sulph. p. 101.

COSTA RICA, Mombacho and Aguacate (*Ærsted*); PANAMA, in damp places, Santiago de Veraguas, San Juan, Cruces, and Gorgona (*Seemann*, 560), Isle of Taboga (*Sinclair*), Empire railway-station (*S. Hayes*, 278). Hb. Kew.

21. **Begonia fimbriata,** Liebm. Mex. og Cent. Am. Beg. p. 18.

SOUTH MEXICO, clothing humid shady rocks in the sierras of Teapa, Tabasco (*Linden*, 37). Hb. Kew.

22. **Begonia flexuosa,** A. DC. Prodr. xv. pars 1, p. 382.

Begonia humilis, Dry., var. *glabrata,* Seem.

NICARAGUA, Chontales (*Seemann*, 45). PANAMA, Chagres (*Fendler*, 297). Hb. Kew.

23. **Begonia franconis,** Liebm. Mex. og Cent. Am. Beg. p. 22.

Begonia parviflora, Liebm.

SOUTH MEXICO, Oaxaca (*Liebmann*).

24. **Begonia fusca,** Liebm. Mex. og Cent. Am. Beg. p. 7.

SOUTH MEXICO, mountains of Oaxaca, 3000 to 5000 feet (*Liebmann*, *Sumichrast*).

25. **Begonia glandulosa,** A. DC. Prodr. xv. pars 1, p. 339; Bot. Mag. t. 5256.

Begonia hernandifolia, Seem.

SOUTH MEXICO (*Jurgensen*, 903); COSTA RICA (*Hoffmann*); PANAMA, San Lorenzo, Veraguas (*Seemann*, 1662). Hb. Kew.

26. **Begonia gracilis,** H. B. K. Nov. Gen. et Sp. vii. p. 184; A. DC. Prodr. xv. pars 1, p. 310.

SOUTH MEXICO.

Var. *α.* **gracilis,** A. DC. loc. cit.

In woods near Pazcuaro (*Humboldt & Bonpland*).

Var. *β.* **depauperata,** A. DC. loc. cit.

In dark woods, Oaxaca (*Galeotti*, 192).

Var. *γ.* **membranacea,** A. DC. loc. cit.

In woods (*Ghiesbreght*, 347).

Var. *δ.* **nervipilosa,** A. DC. loc. cit.

In mountain-woods (*Ghiesbreght*, 222, 223).

Var. ε. **annulata,** A. DC. loc. cit.
Orizaba (*Botteri, Sallé*).

Var. η. **martiana,** Link et Otto (species).
North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 263); South Mexico, Yavesia, Oaxaca (*Liebmann*), Real del Monte (*Coulter*, 1416), valley of Mexico (*Schaffner*, 462; *Bourgeau*), Toluca (*Heller*), Cuaximalpa (*Karwinski*).

Var. ζ. **diversifolia,** Grah. (species) Bot. Mag. t. 2966.
Garden variety. Hb. Kew.

27. **Begonia heracleifolia,** Ch. et Schl. in Linnæa, v. p. 603; Bot. Mag. t. 3444; Bot. Reg. t. 1668.
South Mexico, Mirador (*Linden*, 34; *Heller*), valley of Cordova (*Bourgeau*, 1583; *Sumichrast*, 1595), Colipa and Mirador (*Liebmann*). Hb. Kew.

28. **Begonia humilis,** Ait. Hort. Kew. ed. 1, iii. p. 353.
South Mexico, near Tantoyuca (*Ervendberg*, 320).—West Indies; Guiana; Venezuela. Hb. Kew.

29. **Begonia hydrocotylifolia,** Hook. Bot. Mag. t. 3968.
South Mexico, no special locality recorded.

Var. β. **asarifolia,** Liebm. (species).
South Mexico, Barranca de Teosola, Vera Cruz (*Linden*, 32). Hb. Kew.

30. **Begonia ignea,** Warszewicz, ex DC. Prodr. xv. pars 1, p. 306.
Guatemala (*Warszewicz*); Costa Rica (*Hoffmann*). Hb. Berol.

31. **Begonia imperialis,** Lem. Ill. Hort. vii. Misc. p. 53, et viii. t. 274.
South Mexico, introduced into European gardens (*Ghiesbreght*).

32. **Begonia incana,** Lindl. Bot. Reg. 1841, Misc. n. 73, nec Kl.
South Mexico, Mirador (*Liebmann*). Hb. Kew.

33. **Begonia incarnata,** Link et Otto, Pl. Sel. p. 37, t. 19.
Begonia insignis, Grah. Bot. Mag. t. 2900; Bot. Reg. t. 1996.
South Mexico, Colipa (*Liebmann*), region of Orizaba, at Izhuatlancillo (*Bourgeau*, 2494; *Jurgensen*, 615). Hb. Kew.

34. **Begonia involucrata,** Liebm. Mex. og Cent. Am. Beg. p. 15.
Costa Rica, Candelaria Mountains (*Œrsted*). Hb. Kew.

35. **Begonia karwinskiana,** A. DC. Prodr. xv. pars 1, p. 341.
South Mexico, Izcatlan (*Karwinski*). Hb. Petrop.

36. **Begonia laciniosa,** A. DC. Prodr. xv. pars 1, p. 340.
Central America, introduced into European gardens (*Warszewicz*).

37. **Begonia liebmanni,** A. DC. Prodr. xv. pars 1, p. 345.

Begonia repens, Liebm. nec Benth.

South Mexico, Huitamalco, Puebla (*Liebmann*). Hb. Kew.

38. **Begonia lindleyana,** Walp. Rep. ii. p. 209.

Begonia vitifolia, Lindl. nec Schott.

Guatemala, introduced into the gardens of the Horticultural Society of London (*Hartweg*).

39. **Begonia lobulata,** A. DC. Prodr. xv. pars 1, p. 339.

South Mexico, Trinidad, valley of Cordova (*Bourgeau*, 2100), pine-forests, Chiapas (*Linden*, 40). Hb. Kew.

40. **Begonia locellata,** A. DC. Prodr. xv. pars 1, p. 362.

South Mexico (*Jurgensen*, 958). Hb. Kew.

41. **Begonia longipes,** Hook. Bot. Mag. t. 3001.

Begonia reniformis, Dry.

"Mexico, introduced into English gardens."

This is probably a Brazilian species.

42. **Begonia ludicra,** A. DC. Prodr. xv. pars 1, p. 340.

South Mexico, swamps of Jalapa, 4000 feet (*Galeotti*, 189; *Linden*, 31). Hb. Kew.

43. **Begonia manicata,** Brongn. ined. et Vis. Orto di Padov. 1842, p. 135.

Begonia schizolepis et *B. lepidota,* Liebm.

South Mexico, valley of Cordova (*Bourgeau*, 1983, 1985), Mirador (*Liebmann*), ravines at 3000 feet in the Cordillera of Vera Cruz (*Galeotti*, 198). Hb. Kew.

44. **Begonia maxima,** Hort. Berol., A. DC. Prodr. xv. pars 1, p. 334.

Mexico?

45. **Begonia megaphylla,** A. DC. Prodr. xv. pars 1, p. 341.

South Mexico, region of Orizaba, Santa Teresa (*Bourgeau*, 2968), Vera Cruz (*Linden*, 29), near Tantoyuca (*Ervendberg*, 334). Hb. Kew.

46. **Begonia modesta,** Liebm. Mex. og Cent. Am. Beg. p. 21.

North Mexico, San Luis Potosi to Tampico (*Palmer*, 1066); South Mexico, Colipa (*Liebmann*). Hb. Kew.

47. **Begonia monophylla,** Pav., DC. Prodr. xv. pars 1, p. 284.

Mexico? ("New Spain," *Pavon*, in Hb. Boissier).

48. **Begonia monoptera,** Link et Otto, Ic. Pl. Rar. t. 14; Bot. Mag. t. 3564.

Mexico (*Deppe*). Hb. Kew.

49. **Begonia multinervia,** Liebm. Mex. og Cent. Am. Beg. p. 18.
Begonia lobata, Schott.
COSTA RICA, at an altitude of 3000 feet (*Liebmann*).

50. **Begonia nelumbiifolia,** Ch. et Schl. in Linnæa, v. p. 604.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 2260), near Tantoyuca (*Ervendberg*), Colipa, Vera Cruz (*Liebmann*), Misantla (*Schiede*, 730).—COLOMBIA. Hb. Kew.

51. **Begonia oaxacana,** A. DC. Prodr. xv. pars 1, p. 312.
SOUTH MEXICO, woods at 6000 feet, Cordillera of Oaxaca (*Galeotti*, 196).

Var. β. **pilosula,** A. DC. loc. cit.
Damp places in the pine-forests of Pueblo Nuevo, Chiapas (*Linden*, 39). Hb. Kew.

52. **Begonia palmaris,** A. DC. Prodr. xv. pars 1, p. 307.
Begonia palmata, Pav. in Hb. Boiss., nec Don.
SOUTH MEXICO, Cerro de San Felipe (*Andrieux*, 118), Oaxaca (*Ghiesbreght*).

Var. β. **jurgensenii,** A. DC. loc. cit.
MEXICO (*Jurgensen*, 532). Hb. Kew.

53. **Begonia pedata,** Liebm. Mex. og Cent. Am. Beg. p. 10.
SOUTH MEXICO, Amatlan, Oaxaca (*Liebmann*).

54. **Begonia phyllomaniaca,** Mart. Ind. Sem. Hort. Monac. 1852; Bot. Mag. t. 5254.
GUATEMALA ?, cultivated in European gardens.

55. **Begonia pilifera,** Kl. Begon. p. 86.
SOUTH MEXICO, Vera Cruz (*Linden*, 30); NICARAGUA, Chontales (*Seemann*, 46; *Tate*, 122); PANAMA, Volcan de Chiriqui (*Warszewicz*, 1708), San Lorenzo (*Seemann*, 1660). Hb. Kew.

56. **Begonia pinetorum,** A. DC. Prodr. xv. pars 1, p. 326.
SOUTH MEXICO, pine-forests of Jitotola (*Linden*, 41). Hb. Kew.

57. **Begonia plebeja,** Liebm. Mex. og Cent. Am. Beg. p. 8.
NICARAGUA (*Œrsted*); COSTA RICA (*Œrsted*); PANAMA (*Duchassaing*).

58. **Begonia polygonata,** Liebm. Mex. og Cent. Am. Beg. p. 21.
SOUTH MEXICO, Consoquitla, Mirador (*Liebmann*).

Var. β. **longistipulacea,** A. DC. Prodr. xv. pars 1, p. 312.
MEXICO, humid forests of Teapa (*Linden*, 38). Hb. Kew.

59. **Begonia pruinata,** A. DC. Prodr. xv. pars 1, p. 338; Ref. Bot. t. 247.
COSTA RICA (*Warszewicz*).

60. **Begonia pustulata,** Liebm. Mex. og Cent. Am. Beg. p. 6.
South Mexico, Lacoba, Oaxaca (*Liebmann*; *Galeotti*, 190). Hb. Kew.

61. **Begonia reptans,** Benth. Pl. Hartw. p. 61, nec Liebm.
South Mexico, Hacienda de Joco (*Liebmann*), San Pedro, Tepinapa (*Hartweg*). Hb. Kew.

62. **Begonia rhizocaulis,** Hort. Ber., A. DC. Prodr. xv. p. 340.
Mexico or Central America?

63. **Begonia rosea,** A. DC. Prodr. xv. pars 1, p. 299.
Costa Rica (*Hoffmann*, 730). Hb. Berol.

64. **Begonia sarcophylla,** Liebm. Mex. og Cent. Am. Beg. p. 12.
Begonia sartorii, Liebm.?
South Mexico, Chinantla, Oaxaca (*Liebmann*).

65. **Begonia scandens,** Sw. Prodr. p. 86, excl. synonym. Plum.
Begonia glabra, Aubl.
Begonia elliptica, H. B. K. Nov. Gen. et Sp. vii. t. 641.
Begonia physalifolia, Liebm.
Guatemala (*Friedrichsthal*); Nicaragua, Chontales (*Tate*, 294); Costa Rica (*Œrsted*).
—West Indies and Guiana to Peru. Hb. Kew.

66. **Begonia seemanniana,** A. DC. Prodr. xv. pars 1, p. 332.
Panama, Boquete (*Seemann*, 1661). Hb. Kew.

67. **Begonia semiovata,** Liebm. Mex. og Cent. Am. Beg. p. 22.
Costa Rica, Volcan de Mombacho (*Liebmann*).

68. **Begonia sericoneura,** Liebm. Mex. og Cent. Am. Beg. p. 13.
Nicaragua, Cerro de Pantasmo, at 4500 feet (*Œrsted.*) Hb. Berol.

69. **Begonia setifera,** A. DC. Prodr. xv. pars 1, p. 338.
Panama, Volcan de Chiriqui (*Warszewicz*).

70. **Begonia setulosa,** Bertol. Fl. Guat. p. 37.
Guatemala, Volcan de Agua (*Velasquez*).

71. **Begonia squarrosa,** Liebm. Mex. og Cent. Am. Beg. p. 9, nec Seemann.
South Mexico, Cuesta de San Pedro Alto, Oaxaca (*Liebmann*). Hb. Kew.

72. **Begonia stigmosa,** Lindl. in Bot. Reg. 1845, Misc. no. 40.
Begonia squarrosa, Seem. Bot. Voy. 'Herald,' sine descriptione, nec Liebm.
Panama, Boquete (*Seemann*, 1659). Hb. Kew.

73. **Begonia strigillosa,** Dietr. in Otto & Dietr. Allg. Gartz. 1851, p. 330.
Begonia dædalea, Lem. Ill. Hort. viii. t. 269.
Central America (*Warszewicz*).

74. **Begonia subhumilis,** A. DC.? Prodr. xv. pars 1, p. 298.
NICARAGUA, Chontales (*Tate*, 197).—PERU. Hb. Kew.

75. **Begonia tovarensis,** Kl. Beg. p. 30; DC. Prodr. xv. pars 2, p. 303.
Begonia moritziana, Kl.
Begonia populifolia, Kl., nec H. B. K.
SOUTH MEXICO, Toluca, 6000 feet (*Heller*), near Huatusco (*Liebmann*), Jalapa (*Linden*, 28), Orizaba (*Sallé*), Laguna (*Schiede*); GUATEMALA, Dueñas, 5000 feet (*Salvin & Godman*).—VENEZUELA; GUIANA. Hb. Kew.

76. **Begonia urophylla,** Hook. Bot. Mag. t. 4855.
MEXICO? Cultivated in English gardens.

77. **Begonia,** sp.
NICARAGUA, Chontales (*Tate*, 295). Hb. Kew.

78. **Begonia,** sp.
NICARAGUA, Chontales (*Seemann*, 47; *Tate*, 123). Hb. Kew.

79. **Begonia,** sp.
SOUTH MEXICO, Oaxaca (*Ghiesbreght*, 1). Hb. Kew.

80. **Begonia,** sp. (aff. *B. falcilobæ*, Liebm.).
SOUTH MEXICO, San Nicolas, near Mexico (*Bourgeau*, 649). Hb. Kew.

81. **Begonia,** sp.
SOUTH MEXICO, Chiapas (*Ghiesbreght*, 683). Hb. Kew.

82. **Begonia,** sp.
SOUTH MEXICO, Orizaba, in wet places (*Bourgeau*, 2493). Hb. Kew.

83. **Begonia,** sp.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1984). Hb. Kew.

84. **Begonia,** sp.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1986). Hb. Kew.

Order LXIV. DATISCACEÆ.

Datisceæ, Benth. et Hook. Gen. Plant. i. p. 844.

Two herbaceous and two arboreous species, belonging to three genera. Only one species has been found in America.

1. DATISCA.

Datisca, Linn. Gen. Plant. n. 1132; Benth. et Hook. Gen. Plant. i. p. 844.

Two herbaceous species—one found in California and Mexico, the other having a wide range in Asia Minor and Central Asia.

1. **Datisca glomerata,** Benth. et Hook. loc. cit. p. 845.

Tricerastes glomerata, Presl, Reliq. Hænk. ii. p. 88, t. 64.

California.—Mexico, Western Mexico (*Hænke*).

Order LXV. CACTACEÆ.

Cacteæ, Benth. et Hook. Gen. Plant. i. p. 845.

With the exception of one or two species of *Rhipsalis*, which extend to Africa, Mauritius, and Ceylon, this family is exclusively American, though some species of *Nopalea* and *Opuntia* are now so thoroughly naturalized in certain parts of the Old World, especially in the Mediterranean region, as to have all the appearance of being indigenous. Indeed some botanists incline to the opinion that some of the species may be really indigenous there, just as other families and genera are represented in the two continents by closely allied, though undoubtedly endemic, species. Bentham and Hooker reduce the number of genera to thirteen. The forms are very numerous; but it is very difficult to make an estimate of the number of species. The greater part of the following names were applied to forms cultivated in European gardens and described by horticulturists in horticultural periodicals; and a large number of them could not possibly be employed in a scientific revision of the family. Many of the so-called species were founded upon single plants received in a dead state; and the descriptions are very incomplete. Again, a considerable proportion are simply characterized by external differences, their flowers never having been seen by the describers. Doubtless, too, the selfsame forms have often received more than one name. In some cases no descriptions have been found. However, after making all due allowances, the species are very numerous; and they find their greatest concentration in Mexico, rapidly decreasing in numbers northward, the extreme limit reached being about 50° N. lat. In the West Indies the number of species is comparatively small; but they abound in some parts of Tropical and Subtropical South America, and a few occur in the temperate regions of Chili. The estimated number of species under each genus is in all cases taken from Bentham and Hooker ('Genera Plantarum'); and sometimes their number does not by any means agree with the number of names enumerated here. The majority of the names are taken up in Walpers's 'Repertorium,' vols. ii. and v., and the 'Annales,' vol. ii.

Tribe ECHINOCACTEÆ.

1. MELOCACTUS.

Melocactus, Link et Otto in Verhandl. Preuss. Gartenb. Verein, iii. p. 417; Benth. et Hook. Gen. Plant. i. p. 847.

About thirty species, inhabiting Mexico, Brazil, West Indies, and Colombia.

1. **Melocactus curvispinus,** Hort. Berol., ex Pfeiff. Enum. p. 46; Lab. Monogr. p. 13.

MEXICO.

2. **Melocactus delessertianus,** Lem., ex Labour. Cact. p. 20, absque descr.

MEXICO.

3. **Melocactus ferox,** Pfeiff., ex Labour. Cact. p. 16.

Echinocactus spina-christi, Zucc. in Pfeiff. Enum. p. 59.
Echinocactus armatus, Salm Dyck, ex Labour. loc. cit.

MEXICO, in temperate regions near Santa Rosa de Toliman.—It is said to occur also in SOUTH BRAZIL, to which country it may be limited. (See under *Echinocactus spina-christi.*)

4. **Melocactus mamillariæformis,** Salm Dyck in Otto & Dietr. Allg. Gartz. 1836, p. 148.

Melocactus cephalophora, Salm Dyck, Cact. ed. 2, p. 137.

MEXICO (*Karwinski*).

2. MAMILLARIA.

Mamillaria, Haw. Syn. Pl. Succ. p. 177; Benth. et Hook. Gen. Plant. i. p. 847.

Upwards of 300 forms have been described as species. They inhabit Mexico and the countries immediately to the north; and a few occur in the West Indies, Bolivia, and Brazil.

1. **Mamillaria acanthophlegma,** Lehm. Delect. Sem. Hamb. 1833; Pfeiff. Enum. p. 26.

Mamillaria recta, Miq., ex Labour. Cact. p. 63.
Mamillaria geminispina, DC. Rev. Cact. p. 30, t. 3, nec Haworth, ex Pfeiffer, loc. cit.

SOUTH MEXICO, regions of Yavesia, Oaxaca (*Karwinski*).—Grows in several varieties at Pedregal de San Antonio, near the chief city (*Ehrenberg*). Hort. Kew.

2. **Mamillaria acanthostephes,** Lehm. in Otto & Dietr. Allg. Gartz. 1835, p. 228; Pfeiff. Enum. p. 16.

MEXICO.

3. **Mamillaria acicularis,** Lem. Cact. Gen. et Sp. Nov. p. 34.

MEXICO.

4. **Mamillaria aciculata,** Otto, ex Pfeiff. Enum. p. 29.

MEXICO.

5. **Mamillaria actinoplea,** Ehrb. in Otto & Dietr. Allg. Gartz. xvi. p. 266.

MEXICO.

6. **Mamillaria æruginosa,** Scheidw. in Otto & Dietr. Allg. Gartz. vii. p. 338.

SOUTH MEXICO, State of Oaxaca (*Ehrenberg*).

7. **Mamillaria affinis,** DC. Mém. Cact. p. 11, t. 6.
Mamillaria cataphracta, Mart., ex Pfeiff. Enum. p. 11.
Mexico (*Coulter*).

8. **Mamillaria alpina,** Mart. Act. Acad. Monac., ex Salm Dyck, Cact. ed. 2, p. 79.
South Mexico, Oaxaca (*Karwinski*).

9. **Mamillaria amabilis,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 326.
Mexico.

10. **Mamillaria anguinea,** Otto, ex Salm Dyck, Cact. ed. 2, p. 101.
Mexico, between Zimapan and Toliman, at Las Ajuntas, on the Montezuma river (*Ehrenberg*).

11. **Mamillaria (Anhalonium) areolosa,** Lem. Ill. Hort. vi. Misc. p. 35.
Mexico.

12. **Mamillaria argentea,** Fennel in Otto & Dietr. Allg. Gartz. xv. p. 65; Labour. Cact. p. 54.
Mexico?

13. **Mamillaria atrorubra,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 326.
Mexico.

14. **Mamillaria atrosanguinea,** Ehrb. in Otto & Dietr. allg. Gartz. xvii. p. 270.
Mexico.

15. **Mamillaria aulacantha,** DC. Rev. Cact. p. 113.
Mexico, without locality (*Coulter*).

16. **Mamillaria aulacothele,** Lem. Cact. aliq. Nov. fasc. i. p. 8.
Mexico.

Var. β. **sulcimamma,** Pfeiff. in Otto & Dietr. Allg. Gartz. vi. p. 274.
Mexico.

17. **Mamillaria aureiceps,** Lem. Cact. aliq. Nov. p, 8; Linnæa, xix. p. 346.
Mexico, collected in 1843 near the Rancho del Sabino, 7000 feet, with long or short straight or curved, bright- or deep-yellow spines (*Ehrenberg*). Hort. Kew.

18. **Mamillaria auricoma,** A. Dietr. in Otto & Dietr. Allg. Gartz. xiv. p. 308.
Mexico.

19. **Mamillaria aurorea,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 303.
Mexico.

20. **Mamillaria barbata,** Engelm. in Bost. Journ. Nat. Hist. vi. p. 21; Synops. Cact. U. S. &c. p. 5.
North Mexico, near Cosiquiriachi, Chihuahua (ex *Engelmann*).

20*. **Mamillaria barlowii,** Regel et Klein, Ind. Sem. Hort. Petrop. 1860, p. 46.
MEXICO (*Karwinski*).

21. **Mamillaria benekei,** Ehrb. in Bot. Zeit. ii. p. 833; Salm Dyck, Cact. ed. 2, p. 91 (sub *M. goodrichii*).
MEXICO (ex *Ehrenberg*).

22. **Mamillaria bergenii,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 326.
MEXICO.

23. **Mamillaria bergii,** Miq. Comm. Phytog. iii. p. 104.
Mamillaria seitziana, Miq. in Linnæa, xii. p. 10, nec Martius.
MEXICO.

24. **Mamillaria bicolor,** Lehm. Delect. Sem. Hort. Hamb. 1830; Linnæa, vi. Litteratur-Bericht, p. 11; Pfeiff. & Otto, Abbild. i. t. 3.
Mamillaria eburnea, Miq. in Linnæa, xii. p. 14, ex Pfeiff. Enum. p. 27.
Mamillaria geminispina, Haw. in Philos. Mag. lxiii. p. 42, nec DC., ex Pfeiff. Enum. p. 27.
TEXAS.—SOUTH MEXICO, between Tampico and Real del Monte (*Poselger*), at an elevation of 4000 to 5000 feet on the declivities of the Barrancas of Mestitlan, Ismiquilpan, and Zimapan, and near Cardonal (*Ehrenberg*). Hort. Kew.
According to the rule of priority, Haworth's name should be restored. DeCandolle (Rev. Cact. t. 3) figures a plant which he refers without doubt to Haworth's species. (See under *M. acanthophlegma.*)

25. **Mamillaria bifurca,** Ehrb. in Otto & Dietr. Allg. Gartz. xviii. p. 188.
MEXICO.

26. **Mamillaria biglandulosa,** Pfeiff. in Otto & Dietr. Allg. Gartz. vi. p. 274; Walp. Rep. ii. p. 302.
SOUTH MEXICO, Zimapan, Los Baños de Atotonilco el Grande &c., 6000 to 7500 feet (*Ehrenberg*).

27. **Mamillaria bihamata,** Pfeiff. in Otto & Dietr. Allg. Gartz. vi. p. 274; Walp. Rep. ii. p. 298.
MEXICO, discovered in the Plain of Apam (*Ehrenberg*).
Salm Dyck reduces this to *M. uncinata.*

28. **Mamillaria bockii,** Först. in Otto & Dietr. Allg. Gartz. xv. p. 50.
MEXICO?

29. **Mamillaria brevimamma,** Zucc., ex Pfeiff. Enum. p. 34.
SOUTH MEXICO, near Octopan, in meadows at an elevation of more than 6000 feet, near Pachuca, Zimapan, Los Baños de Atotonilco el Grande, &c. (*Ehrenberg*).

30. **Mamillaria breviseta,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 251.

MEXICO.

31. **Mamillaria cæspititia,** DC. Rev. Cact. p. 112.

Mamillaria nitida, Scheidw. ex Salm Dyck Cact. pp. 10 et 90.

Mamillaria crebrispina, var. β. *nitida,* Monv. Cat., ex Labour. Cact. p. 75.

MEXICO, without locality (*Coulter*), Mineral del Monte and Oaxaca, at an altitude of 7000 feet (ex *Förster*).

32. **Mamillaria carnea,** Zucc. in Pfeiff. Enum. p. 19.

SOUTH MEXICO, Ismiquilpan (ex *Pfeiffer*), Oaxaca (ex *Ehrenberg*).

33. **Mamillaria castaneoides,** Lem. Hort. Univ., ex Labour. Cact. p. 37.

Mamillaria wegenerii, Ehrb. in Bot. Zeit. i. p. 738; Salm Dyck, Cact. ed. 2, p. 84.

SOUTH MEXICO, Oaxaca, discovered in 1843 in several varieties (*Ehrenberg*).

34. **Mamillaria centricirrha,** Lem. Cact. Gen. et Spec. Nov. Hort. Monv. p. 42.

NORTH MEXICO, San Luis Potosi (ex *Ehrenberg*). Hort. Kew.

35. **Mamillaria centrispina,** Pfeiff. Enum. p. 20.

SOUTH MEXICO, Oaxaca (*Ehrenberg*).

36. **Mamillaria cephalophora,** Salm Dyck, Cact. ed. 2, p. 137, et in Otto & Dietr. Allg. Gartz. 1836, p. 148.

MEXICO.

37. **Mamillaria ceratocentra,** Bergm. in Otto & Dietr. Allg. Gartz. viii. p. 130.

MEXICO, near Alfajayuca (*Ehrenberg*).

Labouret (Monogr. Cact. p. 124) refers this to *M. erecta,* Lem.

38. **Mamillaria chrysacantha,** Hort. Berol., ex Pfeiff. Enum. p. 28; Walp. Rep. ii. p. 289.

MEXICO, Mesa de la Magdalena, at 6000 feet, under oaks on vegetable mould above basalt (*Ehrenberg*). Hort. Kew.

39. **Mamillaria cirrhifera,** Mart. in Act. Nov. Nat. Cur. xvi. pt. 1, p. 334; Pfeiffer & Otto Abbild. i. t. 7. Hort. Kew.

SOUTH MEXICO, between Zimapan and Ismiquilpan (*Ehrenberg*).

40. **Mamillaria clava,** Pfeiff. in Otto & Dietr. Allg. Gartz. viii. p. 282; Walp. Rep. ii. p. 295; Bot. Mag. t. 4358.

MEXICO, at Almolon, 5000 feet (*Ehrenberg*).

41. **Mamillaria compacta,** Engelm. in Wisliz. Rep. p. 21.

NORTH MEXICO, Cosiquiriachi, west of Chihuahua (*Wislizenus*).

42. **Mamillaria compressa,** DC. Rev. Cact. p. 112.

Mamillaria angularis, Hort. Berol. ex Pfeiff. Enum. p. 12.

SOUTH MEXICO, Zimapan and Ismiquilpan (*Ehrenberg, Coulter*). Hort. Kew.

43. **Mamillaria conoidea,** DC. Rev. Cact. p. 112; Mém. p. 6, t. 2; Pfeiffer & Otto, Abbild. ii. t. 26.

Mamillaria inconspicua, Scheidw. in Bull. Acad. Brux. 1838.

Mamillaria diaphanacantha, Lem. Cact. Hort. Monv. p. 39.

North Mexico, received from San Luis Potosi (*Ehrenberg*); South Mexico, Zimapan (*Ehrenberg*).

44. **Mamillaria conopsea,** Scheidw. in Bull. Acad. Brux. v. p. 494.

North Mexico, San Luis Potosi (*Ehrenberg*); South Mexico, in tufts 1 to 2 feet across, in the Barrancas near Mestitlan and Ismiquilpan (*Ehrenberg*).

This is referred by Labouret to *M. phymatothela.*

45. **Mamillaria cornifera,** DC. Rev. Cact. p. 111; Salm Dyck, Cact. ed. 2, p. 20 et 131.

Var. β. **implexicoma,** Salm Dyck, Cact. ed. 2, p. 20.

Var. γ. **mutica,** Salm Dyck, loc. cit.

Ehrenberg regards these forms as species, thus:—

Mamillaria cornifera, DC.

South Mexico, about Zimapan, Ismiquilpan, Actopan, Pachuca, Mineral del Monte, 7000 to 8000 feet (*Ehrenberg*). Hort. Kew.

Mamillaria implexicoma, Salm Dyck.

North Mexico, received from San Luis Potosi (*Ehrenberg*).

Mamillaria mutica, Salm Dyck.

North Mexico, received from San Luis Potosi (*Ehrenberg*).

46. **Mamillaria corollaria,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 294; Walp. Ann. ii. p. 677.

Mexico.

47. **Mamillaria coronaria,** Haw. Revis. Pl. p. 69; Pfeiff. Enum. p. 33.

Cactus coronatus, Willd. Suppl. p. 30.

Cactus cylindricus, Ort. Dec. p. 128, t. 16.

Mexico (ex *Pfeiffer*); Guatemala (*Pfeiffer*).

48. **Mamillaria crassispina,** Pfeiff. in Otto & Dietr. Allg. Gartz. viii. p. 406.

Mamillaria floccigera, Otto, ex Labour. Cact. p. 42.

Mamillaria flaviceps, Scheidw., ex Labour. Cact. p. 42.

Mexico. Hort. Kew.

49. **Mamillaria crebrispina,** DC. Rev. Cact. p. 111.

Mamillaria polychlora, Scheidw., ex Labour. Cact. p. 74.

North Mexico, San Luis Potosi (ex *Labouret*), from the same place, though very rare (*Galeotti*), without locality (*Coulter*).

50. **Mamillaria crinita,** DC. Rev. Cact. p. 112, et Mém. Cact. t. 3.
South Mexico, Zimapan (*Coulter*), Rancho de San Antonio (*Ehrenberg*).

51. **Mamillaria crocidata,** Lem. Cact. aliq. Nov. fasc. i. p. 9.
South Mexico, Mineral del Monte (*Ehrenberg*).

52. **Mamillaria crucigera,** Mart. in Act. Nov. Nat. Cur. xvi. pt. 1, p. 346, t. 25. fig. 2.
Mexico, in temperate regions (*Karwinski*). Hort. Kew.

53. **Mamillaria curvispina,** Otto, in Otto & Dietr. Allg. Gartz. xiv. p. 204.
Mexico.
This is perhaps a variety of *M. discolor.*

54. **Mamillaria cylindracea,** DC. Rev. Cact. p. 111.
Mexico (*Coulter*).

55. **Mamillaria dealbata,** A. Dietr. in Otto & Dietr. Allg. Gartz. xiv. p. 309; Salm Dyck, Cact. ed. 2, p. 89.
Mexico.

56. **Mamillaria decipiens,** Scheidw. in Bull. Acad. Brux. v. p. 496; Walp. Rep. ii. p. 297.
Mamillaria guilleminiana, Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 48.
Mexico. Hort. Kew.

57. **Mamillaria densa,** Link et Otto, Ic. Pl. Rar. t. 35.
South Mexico, Zimapan (*Ehrenberg*). Hort. Kew.
Pfeiffer makes this var. β of *M. echinata.*

58. **Mamillaria depressa,** Scheidw. in Bull. Acad. Brux. v. p. 494; Walp. Rep. ii. p. 301.
Mexico. Hort. Kew.
Referred to *M. adunca* by Salm Dyck, Cact. ed. 2, p. 16.

59. **Mamillaria diadema,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiii. p. 346; Walp. Rep. v. p. 810.
South Mexico, Real del Monte (ex *Mühlenpfordt*).

60. **Mamillaria disciformis,** DC. Rev. Cact. p. 114, et Mém. Cact. p. 14.
Mexico, without locality (*Coulter*).

61. **Mamillaria discolor,** Haw. Syn. p. 177; Salm Dyck, Cact. ed. 2, pp. 11, 95; DC. Rev. Cact. p. 28, t. 2. fig. 2.
Mamillaria depressa, DC. Cat. Hort. Monsp., ex DC. loc. cit.

Var. β. **albida,** Salm Dyck, loc. cit. p. 11.

Var. γ. **aciculata,** Salm Dyck, loc. cit.

Var. δ. **coniflora,** Salm Dyck, loc. cit.

Var. ε. **curvispina,** Salm Dyck, loc. cit.

Var. ζ. **nitens,** Salm Dyck, loc. cit.

MEXICO, in warm regions only (ex *Förster*). Hort. Kew.

Pfeiffer (Enum. Diag. Cact. p. 28) has a var. β. *prolifera*; and he also refers *M. pulchella*, Hort. Berol., hither, whereas Labouret retains it as a distinct species.

62. **Mamillaria divergens,** DC. Rev. Cact. p. 113.

MEXICO, without locality (*Coulter*).

63. **Mamillaria dolichocentra,** Lem. Cact. aliq. Nov. p. 3; Icon. Cact. fasc. ii.

Mamillaria longispina, Reichenb.

Mamillaria obscura, Scheidw.

Mamillaria stenocephala, Scheidw., ex Labour. Cact. p. 50.

SOUTH MEXICO, neighbourhood of Jalapa, on the Rio Grande, and in the Barrancas of Mestitlan (*Ehrenberg*). Hort. Kew.

64. **Mamillaria dyckiana,** Zucc. in Pfeiff. Enum. p. 26.

SOUTH MEXICO, near Zimapan and Ismiquilpan (ex *Förster*).

65. **Mamillaria eborina,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 309; Walp. Ann. ii. p. 679.

MEXICO.

66. **Mamillaria echinata,** DC. Mém. Cact. p. 3.

Mamillaria echinaria, DC. Rev. Cact. p. 110?

Mamillaria densa, Link et Otto, Ic. t. 35, ex Pfeiff. Enum. p. 6.

SOUTH MEXICO, near Las Ajuntas, on the Montezuma river (*Ehrenberg*). Hort. Kew.

67. **Mamillaria echinocactoides,** Pfeiff. in Otto & Dietr. Allg. Gartz. viii. p. 281; Walp. Rep. ii. p. 299.

MEXICO (*Ehrenberg*).

68. **Mamillaria echinus,** Engelm. Cact. U.S. et Mex. Bound. Surv. p. 13, t. 10.

TEXAS.—NORTH MEXICO, from Presidio del Norte to Santa Rosa (*Bigelow*).

69. **Mamillaria ehrenbergii,** Pfeiff. in Otto & Dietr. Allg. Gartz. vi. p. 274.

SOUTH MEXICO, Mineral del Monte (*Ehrenberg*).

70. **Mamillaria elegans,** DC. Rev. Cact. p. 111.

Mamillaria supertexta, Hort., nec Mart., ex Pfeiff. Enum. p. 25.

SOUTH MEXICO, without locality (*Coulter*), near Yavesia, Oaxaca.

71. **Mamillaria elongata,** DC. Rev. Cact. p. 109.

SOUTH MEXICO, without locality (*Coulter*), Zimapan (*Ehrenberg*). Hort. Kew.

Salm Dyck (Cact. ed. 2, pp. 12, 100) refers *M. subcrocea*, DC., and *M. intertexta*, DC., to this species.

72. **Mamillaria (Anhalonium) elongata,** Salm Dyck, Cact. ed. 2, p. 77.
Anhalonium pulvilligerum, Lem. Hort. Monv. i. p. 275, cum ic., ex Salm Dyck, loc. cit. p. 5.
MEXICO (*Galeotti?*).

73. **Mamillaria elephantidens,** Lem. Cact. in Hort. Monv. Descr. i. p. 1, Hort. Univ. t. 33, et Iconogr. Cact. livr. ii.; Pfeiffer & Otto, Abbild. ii. t. 20.
MEXICO. Hort. Kew.

74. **Mamillaria erecta,** Lem. Cact. aliq. Nov. Hort. Monv. p. 3, et Iconogr. Cact. livr. ii.
NORTH and SOUTH MEXICO, on the Rio Grande, on the Mesillas, near Ismiquilpan and Zimapan, and on the Cardonal (*Ehrenberg*). Hort. Kew.

75. **Mamillaria erectacantha,** Först. in Otto & Dietr. Allg. Gartz. xv. p. 50.
MEXICO.

76. **Mamillaria eriacantha,** Hort. Berol., ex Pfeiff. Enum. p. 32; Pfeiffer & Otto, Abbild. i. t. 25.
Mamillaria cylindracea, DC. Rev. Cact. p. 111?
SOUTH MEXICO, Malpays de Naulingo (*Ehrenberg*).

77. **Mamillaria euchlora,** Ehrb. in Otto & Dietr. Allg. Gartz. xvi. p. 326; Walp. Ann. ii. p. 674.
MEXICO.

78. **Mamillaria eximia,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 309; Walp. Ann. ii. p. 678.
MEXICO. Hort. Kew.

79. **Mamillaria exudans,** Zucc. in Pfeiff. Enum. p. 15.
SOUTH MEXICO, between Ismiquilpan and Zimapan (*Karwinski*).

80. **Mamillaria fellneri,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 261; Walp. Ann. ii. p. 676.
MEXICO.

81. **Mamillaria fischeri,** Pfeiff. in Otto & Dietr. Allg. Gartz. 1836, p. 257, et Enum. p. 20.
MEXICO.

82. **Mamillaria flavescens,** Pfeiff. Enum. p. 10.
Cactus flavescens, DC. Cat. Hort. Monsp. p. 83.
SOUTH MEXICO, Oaxaca (*Ehrenberg*). Hort. Kew.

83. **Mamillaria försterii,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiv. p. 371.
MEXICO.

84. **Mamillaria formosa,** Galeotti, MSS., ex Scheidw. in Bull. Acad. Brux. v. p. 497.

North Mexico, San Luis Potosi (*Ehrenberg*). Hort. Kew.

85. **Mamillaria foveolata,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiv. p. 372.

Mexico?

86. **Mamillaria fulvispina,** Haw. in Phil. Mag. 1830, p. 109; Pfeiff. Enum. p. 30; Salm Dyck, Cact. ed. 2, pp. 10, 93.

Var. β. **rubescens,** Salm Dyck, loc. cit. p. 10.

Mamillaria rhodantha, var. *rubens,* Pfeiff. Enum. p. 31.

Mexico.—Brazil. Hort. Kew.

87. **Mamillaria funckii,** Scheidw. in Otto & Dietr. Allg. Gartz. xx. p. 43.

South Mexico, Oaxaca (*Ehrenberg*).

88. **Mamillaria fuscata,** Hort. Berol., ex Pfeiff. Enum. p. 28.

South Mexico, Mesa de la Magdalena, 6000 feet (*Ehrenberg*).

89. **Mamillaria geminata,** Scheidw. in Otto & Dietr. Allg. Gartz. ix. p. 42; Walp. Rep. ii. p. 299.

Mexico, at an altitude of 6000 feet (ex *Scheidweiler*).

90. **Mamillaria glabrata,** Salm Dyck, Cact. ed. 2, p. 109; Scheer in Seem. Bot. Voy. 'Herald,' p. 288.

North Mexico, near Chihuahua (*Potts*).

91. **Mamillaria gladiata,** Mart. in Act. Nov. Nat. Cur. xvi. pt. 1, p. 336.

Mamillaria deflexispina, Lem. Cact. aliq. Nov. Hort. Monv. p. 6.

South Mexico, Mineral del Monte (*Deschamps*), Ismiquilpan, temperate regions near Pachuca, between 9000 and 10,000 feet (*Ehrenberg*).

92. **Mamillaria glanduligera,** Otto & Dietr. Allg. Gartz. 1848, p. 298; Labour. Cact. p. 130.

Mexico.

93. **Mamillaria glauca,** A. Dietr. in Otto & Dietr. Allg. Gartz. 1848, p. 330; Labour. Cact. p. 112.

Mexico.

94. **Mamillaria glochidiata,** Mart. in Act. Nov. Nat. Cur. xvi. pt. 1, p. 337, t. 23.

Mamillaria criniformis, DC. Mém. Cact. p. 8, t. 4.

Mamillaria ancistroides, Lehm. Delect. Sem. Hort. Hamb. 1832.

Var. α. **rosea,** DC. loc. cit.

Var. β. **albida,** DC. loc. cit.

Mexico, both varieties, without locality (*Coulter*), near San Pedro Nolasco, at 7000 to 8000 feet (*Karwinski*). Hort. Kew.

95. **Mamillaria goodrichii,** Scheer, ex Salm Dyck, Cact. ed. 2, p. 91; Labour. Cact. p. 32.

Mamillaria benekei, Ehrb. in Bot. Zeit. ii. p. 833?, ex Salm Dyck, Cact. ed. 2, p. 91.

California.—Mexico.

96. **Mamillaria grahami,** Engelm. Cact. U.S. et Mex. Bound. Surv. p. 7, t. 6. figs. 1–8.

New Mexico.—North-west Mexico (*Parry, Schott, Bigelow*).

97. **Mamillaria gracilis,** Pfeiff. in Otto & Dietr. Allg. Gartz. vi. p. 275.

South Mexico, Puente de Dios, 5300 feet, all the barrancas of Mestitlan and Zimapan (*Ehrenberg*). Hort. Kew.

98. **Mamillaria grandicornis,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiv. p. 372.

Mexico.

99. **Mamillaria grandiflora,** Otto in Pfeiff. Enum. p. 33.

Mexico. Hort. Kew.

Perhaps the same as *M. conoidea,* DC.

99*. **Mamillaria granulata,** Meinsh. in Koch's Wochenschr. i. p. 264.

Mexico (*Karwinski*).

100. **Mamillaria grisea,** Salm Dyck, Cact. ed. 2, p. 110.

Mexico.

101. **Mamillaria gummifera,** Engelm. in Bost. Journ. Nat. Hist. vi. p. 21.

North Mexico, Cosiquiriachi (*Wislizenus*).

102. **Mamillaria haageana,** Pfeiff. in Otto & Dietr. Allg. Gartz. 1836, p. 257, et Enum. p. 26.

Mamillaria perote, Hortul., ex Pfeiff. loc. cit.

Mexico, Perote (ex *Pfeiffer*).

103. **Mamillaria hæmatactina,** Ehrb. in Otto & Dietr. Allg. Gartz. xvi. p. 266; Walp. Ann. ii. p. 673.

Mexico.

104. **Mamillaria hamata,** Lehm. Delect. Sem. Hort. Hamb. 1832; Pfeiff. Enum. p. 34.

Mexico.

105. **Mamillaria heinei,** Ehrb. in Bot. Zeit. ii. p. 833.

Mexico.

106. **Mamillaria helicteres,** DC. Rev. Cact. p. 31, t. 5.

Mexico (*Moçino*).

107. **Mamillaria heteromorpha,** Scheer in Seem. Bot. Voy. 'Herald,' p. 289.

North Mexico, near Chihuahua (*Potts*).

108. **Mamillaria hexacantha,** Salm Dyck, Hort. Dyck. p. 344, ex Pfeiff. Enum. p. 30.

MEXICO, near Las Ajuntas, where the Montezuma river joins the Toliman (*Ehrenberg*).

109. **Mamillaria heyderi,** Mühlpf. in Otto & Dietr. Allg. Gartz. xvi. p. 20; Walp. Ann. ii. p. 680.

Var. α. **applanata,** Engelm. in Pl. Lindh.

Var. β. **hemisphærica,** Engelm. loc. cit.

TEXAS.—NORTH MEXICO, Matamoras, Sonora (*Schott*).

110. **Mamillaria humboldtii,** Ehrb. in Linnæa, xiv. p. 378; Salm Dyck, Cact. ed. 2, p. 85.

SOUTH MEXICO, Ismiquilpan and Mestitlan, on calcareous rocks (*Ehrenberg*).

111. **Mamillaria hystrix,** Mart., ex Salm Dyck, Cact. ed. 2, p. 119.

NORTH MEXICO, San Luis Potosi; SOUTH MEXICO, Oaxaca (*Ehrenberg*).

112. **Mamillaria incurva,** Scheidw. in Bull. Acad. Brux. vi. p. 6.

MEXICO.

113. **Mamillaria intertexta,** DC. Rev. Cact. p. 110.

NORTH MEXICO, Chihuahua; SOUTH MEXICO, without locality (*Coulter*), Zimapan (*Ehrenberg*). Hort. Kew.

114. **Mamillaria irregularis,** DC. Rev. Cact. p. 111.

MEXICO (*Coulter*, 31).

115. **Mamillaria isabellina,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 309; Walp. Ann. ii. p. 678.

MEXICO.

116. **Mamillaria jucunda,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 250; Walp. Ann. ii. p. 675.

MEXICO.

117. **Mamillaria karwinskiana,** Mart. in Act. Nov. Nat. Cur. xvi. pt. 1, p. 335, t. 22.

SOUTH MEXICO, without locality (*Karwinski*), Oaxaca (*Ehrenberg*). Hort. Kew.

117*. **Mamillaria kleinii,** Regel, Ind. Sem. Hort. Petrop. 1860, p. 47.

MEXICO (*Karwinski*).

118. **Mamillaria klugii,** Ehrb. in Bot. Zeit. ii. p. 834.

MEXICO.

119. **Mamillaria krameri,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiii. p. 347; Walp. Rep. v. p. 810.

Mamillaria pachythele, Salm Dyck, Cact. ed. 2, pp. 17 et 122.

SOUTH MEXICO, Real del Monte (ex *Mühlenpfordt*).

120. **Mamillaria kunthii,** Ehrb. in Bot. Zeit. ii. p. 835.

Mexico.

120*. **Mamillaria lactescens,** Meinsh. in Koch's Wochenschr. ii. p. 117.

Mexico (*Karwinski*).

121. **Mamillaria lanifera,** Haw. in Phil. Mag. lxiii. p. 41; DC. Rev. Cact. p. 31, t. 4.

Mexico (*Moçino, Bullock*).

122. **Mamillaria latimamma,** DC. Rev. Cact. p. 114.

Mexico (*Coulter*, 54).

123. **Mamillaria lehmanni,** Hort. Berol., ex Pfeiff. Enum. p. 23; Bot. Mag. t. 3634.

Mexico.

124. **Mamillaria leucocentra,** Bergm. in Otto & Dietr. Allg. Gartz. viii. p. 130.

Mexico, near Zimapan, on the Caracol between Lomo del Toro and Las Ajuntas (*Ehrenberg*).

125. **Mamillaria leucodasys,** Salm Dyck, ex Scheer in Seem. Bot. Voy. 'Herald,' p. 286.

North Mexico, near Chihuahua (*Potts*).

126. **Mamillaria leucodictya,** Linke in Otto & Dietr. Allg. Gartz. xvi. p. 330; Walp. Ann. ii. p. 674.

Mexico.

127. **Mamillaria linkeana,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 308; Walp. Ann. ii. p. 678.

Mexico.

128. **Mamillaria livida,** Fennel in Otto & Dietr. Allg. Gartz. xv. p. 66.

Mexico.

129. **Mamillaria longimamma,** DC. Rev. Cact. p. 113, et Mém. Cact. t. 5.

Mexico, without locality (*Coulter*), neighbourhood of Ismiquilpan, Zimapan, also the great Barranca of the Rio Grande, on the Mesillas, near Aquialco, and near Las Ajuntas, where the Montezuma river joins the Tolmian, 5000 to 6000 feet (*Ehrenberg*). Hort. Kew.

130. **Mamillaria longiseta,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiii. p. 346; Walp. Rep. v. p. 810.

Mexico, Real del Monte (ex *Mühlenpfordt*).

131. **Mamillaria loricata,** Mart. in Pfeiff. Enum. p. 13.

Mamillaria heteracantha, Hort., ex Pfeiff. loc. cit.

Mexico.

132. **Mamillaria ludwigii,** Ehrb. in Linnæa, xiv. p. 376; Labour. Cact. p. 112.
MEXICO, Las Ranas (*Ehrenberg*).
This has been united with *M. phymatothele*, Bergm.; but Ehrenberg says it is distinct, and found in a different locality.

133. **Mamillaria macromeris,** Engelm. Sketch Bot. Wislizenus's Exped. p. 13.
NORTH MEXICO, near Doñana.

134. **Mamillaria macrothele,** Mart. ex Pfeiff. Enum. p. 24.
SOUTH MEXICO, near Actopan, in meadows at an altitude of 6000 to 7000 feet, near Pachuca, Zimapan, Los Baños de Atotonilco el Grande, &c. (*Ehrenberg*).

135. **Mamillaria magnimamma,** Haw. Phil. Mag. lxiii. p. 14.
Mamillaria ceratophora, Lehm. in Dietr. & Otto, Allg. Gartz. 1835, p. 228, ex Pfeiff. Enum. p. 14.
SOUTH MEXICO, a rather widely dispersed and very variable species, occurring on the tablelands near Mexico, San Mateo, Pachuca, Sinquiluca, Apam, Zacualtepan, &c., 7000 to 8000 feet (*Ehrenberg*). Hort. Kew.

Var. **arietina.**
Rocks of Pedregal, near San Angel (*Bourgeau*, 266). Hort. Kew.

136. **Mamillaria maschalacantha,** Monv. Cat. p. 77.
Mamillaria leucocarpa, Scheidw. ex Labour. Cact. p. 106.
Mamillaria mutabilis, Scheidw., *γ. lævior,* Salm Dyck, Cact. ed. 2, p. 120.
NORTH MEXICO, San Luis Potosi (ex *Labouret*); SOUTH MEXICO, Oaxaca (*Ehrenberg*).

137. **Mamillaria megacantha,** Salm Dyck, Cact. ed. 2, p. 123.
MEXICO.

138. **Mamillaria meiacantha,** Engelm. Cact. U.S. et Mex. Bound. Surv. p. 9, t. 9. figg. 1–3.
NEW MEXICO.—NORTH MEXICO.

139. **Mamillaria melaleuca,** Karw. ex Salm Dyck, Cact. ed. 2, p. 108, et Labour. Cact. p. 83.
MEXICO, Oaxaca (*Karwinski*).

140. **Mamillaria micans,** Dietr. in Otto & Dietr. Allg. Gartz. xvi. p. 330; Walp. Ann. ii. p. 674.
MEXICO.

141. **Mamillaria microceras,** Lem. Cact. aliq. Nov. Hort. Monv. p. 6; Walp. Rep. ii. p. 293.
MEXICO.

142. **Mamillaria micromeris,** Engelm. Cact. U.S. et Mex. Bound. Surv. p. 1, t. 1 et t. 2. figg. 1–4.

North Mexico, from El Paso to the San Pedro river, also in a single locality east of this river (only on limestone, never in the porphyritic region, *Wright*).

Var. β. **greggii,** Engelm. loc. cit. et Synop. Cact. U. S. &c. p. 5.

North Mexico, mountain-ridge between Azufrora and Penos Bravos, near Saltillo (*Gregg*).

143. **Mamillaria minima,** Rchb. in Terscheck, Suppl. Cact. p. 1; Walp. Rep. ii. p. 301.

South Mexico, near Zimapan, on the Caracol (*Ehrenberg*). Hort. Kew.

144. **Mamillaria mirabilis,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 251; Walp. Ann. ii. p. 676.

Mexico.

145. **Mamillaria mucronata,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 294; Walp. Ann. ii. p. 677.

Mexico.

146. **Mamillaria mühlenpfordtii,** Först. in Otto & Dietr. Allg. Gartz. xv. p. 49.

Mexico.

146*. **Mamillaria multiceps,** Salm Dyck, Cact. ed. 2, p. 81; Koch's Wochenschr. i. p. 27.

Mexico (*Karwinski*). Hort. Kew.

147. **Mamillaria multiseta,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 242; Walp. Ann. ii. p. 674.

Mexico.

148. **Mamillaria mutabilis,** Scheidw. in Otto & Dietr. Allg. Gartz. ix. p. 43; Walp. Rep. ii. p. 298.

Mexico. Hort. Kew.

149. **Mamillaria mystax,** Mart. in Act. Nov. Nat. Cur. xvi. pars 1, p. 332, t. 21.

South Mexico, Ismiquilpan and San Pedro Nolasco, at about 6000 feet (*Karwinski*), Oaxaca (*Ehrenberg*).

150. **Mamillaria neumanniana,** Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 53.

Mamillaria conopsea, Hort. Berol. nec Scheidw., ex Ehrenberg in Linnæa, xix. 350.

South Mexico, Barrancas near Mestitlan and Ismiquilpan (*Ehrenberg*). Hort. Kew.

151. **Mamillaria nigra,** Ehrb. in Otto & Dietr. Allg. Gartz. 1849, p. 287; Salm Dyck, Cact. ed. 2, p. 94.

Mexico.

152. **Mamillaria nigricans,** Fennel in Otto & Dietr. Allg. Gartz. xv. p. 66; Pfeiffer & Otto, Abbild. ii. t. 23.

Mexico.

153. **Mamillaria nivea,** Wendl. Cat. Hort. Herrenh. 1835.
Mamillaria toaldoæ, Lehm., ex Walp. Rep. ii. p. 289.
MEXICO. Hort. Kew.

154. **Mamillaria nobilis,** Pfeiff. in Otto & Dietr. Allg. Gartz, viii. p. 282; Walp. Rep. ii. p. 302.
Mamillaria bicolor, β. nobilis, Först.
MEXICO. Hort. Kew.

155. **Mamillaria nuda,** DC. Prodr. iii. p. 460.
MEXICO.

156. **Mamillaria obliqua,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 250; Walp. Ann. ii. p. 675.
MEXICO.

157. **Mamillaria obvallata,** Otto in Otto & Dietr. Allg. Gartz. xiv. p. 308.
MEXICO.

158. **Mamillaria octacantha,** DC. Rev. Cact. p. 113.
MEXICO, without locality (*Coulter*).
Pfeiffer (Enum. Cact. p. 23) reduces this and *M. aulacantha*, DC., to *M. lehmanni*, Hort.; and Salm Dyck (Cact. ed. 2, p. 19) refers them and several others to *M. macrothele*, Mart., a later name.

159. **Mamillaria odieriana,** Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 86.
SOUTH MEXICO, near Acholoya, beneath oak trees, at 6500 feet (*Ehrenberg*). Hort. Kew.

160. **Mamillaria ottonis,** Pfeiff. in Otto & Dietr. Allg. Gartz. vi. p. 274; Salm Dyck, Cact. ed. 2, p. 129.
SOUTH MEXICO, Mineral del Monte (*Ehrenberg*).

161. **Mamillaria olorina,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 326; Walp. Ann. ii. p. 679.
MEXICO.

162. **Mamillaria pallescens,** Scheidw. in Otto & Dietr. Allg. Gartz. ix. p. 42; Walp. Rep. ii. p. 294.
SOUTH MEXICO, near Tehuacan, above 5500 feet (*Galeotti*).

163. **Mamillaria parkinsonii,** Ehrb. in Linnæa, xiv. p. 375.
SOUTH MEXICO, near San Onofre, at about 4000 feet, and also in the Mineral del Monte, on calcareous rocks (*Ehrenberg*). Hort. Kew.

164. **Mamillaria pazzanii,** Steeber, in Bot. Zeit. v. p. 491.
MEXICO.

165. **Mamillaria pentacantha,** Pfeiff. in Otto & Dietr. Allg. Gartz. viii. p. 406, et in Salm Dyck, Cact. ed. 2, p. 121.

MEXICO. Hort. Kew.

166. **Mamillaria persicina,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 250; Walp. Ann. ii. p. 675.

MEXICO. Hort. Kew.

167. **Mamillaria pfeifferiana,** Vriese in Tijdschrift Nat. Gesch. vi. p. 51, t. 1. fig. 2; Walp. Rep. ii. p. 303.

Vriese distinguishes the following varieties:—

Var. *a*. **fulvispina,** Scheidw. in Bull. Acad. Brux. vi. p. 6 (species).

Var. *β*. **dichotoma,** id. ibid.

Var. *γ*. **altissima,** id. ibid.

Var. *δ*. **flaviceps,** id. ibid.

Var. *ε*. **variabilis,** id. ibid.

MEXICO.

168. **Mamillaria phæacantha,** Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 47.

Mamillaria radula, Hort. Berol.

SOUTH MEXICO, on sandstone hills near Regla at 6500 feet, and at San Toro at 6000 feet (*Ehrenberg*).

169. **Mamillaria phæotricha,** Monv. Cat. 1846, ex Labouret, Cact. p. 39.

MEXICO?

170. **Mamillaria phellosperma,** Engelm. Cact. U.S. et Mex. Bound. Surv. p. 6, t. 7.

Mamillaria tetrancistra, Engelm. (partim) in Sill. Journ. 1852.

ARIZONA.—NORTH-WEST MEXICO (*Schott, Parry, Bigelow*).

171. **Mamillaria phymatothele,** Bergm. in Otto & Dietr. Allg. Gartz. viii. p. 129.

MEXICO, San Felipe (*Ehrenberg*). Hort. Kew.

171*. **Mamillaria picta,** Meinsh. in Koch's Wochenschr. i. p. 27.

MEXICO (*Karwinski*).

172. **Mamillaria plaschnickii,** Otto, ex Pfeiff. Enum. p. 24.

SOUTH MEXICO, near Actopan, above 6000 feet, Zimapan, Pachuca &c., at 6000 to 7500 feet (*Ehrenberg*).

172*. **Mamillaria plecostigma,** Meinsh. in Koch's Wochenschr. i. p. 27.

MEXICO (*Karwinski*).

172**. **Mamillaria pleiocephala,** Regel et Klein, Ind. Sem. Hort. Petrop. 1860, p. 47.
Mexico (*Karwinski*).

173. **Mamillaria polycentra,** Bergm. in Otto & Dietr. Allg. Gartz. viii. p. 130; Walp. Rep. ii. p. 297.
Mexico.

174. **Mamillaria polycephala,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiii. p. 346; Walp. Rep. v. p. 810.
South Mexico, Real del Monte (ex *Mühlenpfordt*).

175. **Mamillaria polyedra,** Mart. in Act. Nov. Nat. Cur. xvi. pars 1, p. 326, t. 18.
South Mexico, near Oaxaca, at Zimapan and Ismiquilpan (*Karwinski*, *Ehrenberg*). Hort. Kew.

Var. β. **lævior,** Salm Dyck, Cact. ed. 2, p. 17.
Mamillaria anisacantha, Hort. ex Salm Dyck, loc. cit.

176. **Mamillaria polygona,** Salm Dyck, Cact. ed. 2, p. 120.
Mexico.

177. **Mamillaria polymorpha,** Scheer in Otto & Dietr. Allg. Gartz. xiv. p. 573.
Mexico.

178. **Mamillaria polythele,** Mart. in Act. Nov. Nat. Cur. xvi. pars 1, p. 328, t. 19; Labour. Cact. p. 51.

Labouret (*loc. cit.*) makes the following varieties, some of which are kept distinct here on the authority of Ehrenberg:—

Var. α. **polythele.**
South Mexico, Ismiquilpan (*Ehrenberg*). Hort. Kew.

Var. β. **quadrispina,** Mart. loc. cit. p. 329 (species).
South Mexico, Puerto de Ismiquilpan (*Ehrenberg*).

Var. γ. **hexacantha,** Salm Dyck.
Mamillaria columnaris, Mart. loc. cit. p. 330 (species).

Var. δ. **setosa,** Salm Dyck.
South Mexico, Barranca de los Majadas, in forests on mossy cliffs (*Ehrenberg*).

Var. ε. **aciculata,** Salm Dyck.

Var. ζ. **latimamma,** Salm Dyck.

179. **Mamillaria pomacea,** Ehrb. in Otto & Dietr. Allg. Gartz. xvi. p. 267; Walp. Ann. ii. p. 674.
Mexico.

180. **Mamillaria pottsii,** Scheer in Engelm. Synop. Cact. U.S. &c. p. 12.
Texas.—North Mexico, Chihuahua, limestone rocks, 6000 to 7000 feet (*Potts*).

181. **Mamillaria prælii,** Mühlenpf. in Otto & Dietr. Allg. Gartz. xiv. p. 372.
Mexico. Hort. Kew.
Salm Dyck (Cact. ed. 2, p. 116) regards this as a variety of *M. viridis*.

182. **Mamillaria pretiosa,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 250; Walp. Ann. ii. p. 676.
Mexico.

183. **Mamillaria (Anhalonium) prismatica,** Lem. Hort. Univ. i. p. 231, t. 1; Walp. Rep. ii. p. 309; Salm Dyck, Cact. ed. 2, p. 77.
Anhalonium retusum, Salm Dyck, Cact. 1844, p. 15.
Ariocarpus retusus, Scheidw. Descr. Cact. Nonn. p. 2, t. 1.
Mamillaria aloides, Monv. Cat. 1846, ex Labour. Cact. p. 153.
North Mexico, fissures of porphyritic rocks near San Luis de Potosi (*Galeotti*).

184. **Mamillaria procera,** Ehrb. in Otto & Dietr. Allg. Gartz. 1849, p. 241.
Mexico. Hort. Kew.

185. **Mamillaria pugionacantha,** Först. in Otto & Dietr. Allg. Gartz. xv. p. 50.
Mexico.

186. **Mamillaria pulchella,** Hort. Berol., ex Salm Dyck, Cact. ed. 2, pp. 10 et 94.
Mexico. Hort. Kew.
Pfeiffer (Enum. p. 28) refers this to *M. discolor*.

187. **Mamillaria pulcherrima,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 242.
Mexico. Hort. Kew.

188. **Mamillaria pulchra,** Haw. in Bot. Reg. t. 1329.
Mexico.
Pfeiffer refers this, with a doubt, to *M. tentaculata*.

189. **Mamillaria purpurea,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 270; Walp. Ann. ii. p. 677.
Mexico.

190. **Mamillaria pusilla,** DC. Prodr. iii. p. 459, et Rev. t. 2. fig. 1.
Cactus stellatus, Lodd. Bot. Cab. i. t. 79.

Var. **texana,** Engelm. Cact. U.S. et Mex. Bound. Surv. p. 5, t. 5.
North Mexico, common along the Rio Grande (*Bigelow, Poselger*).
The typical plant is from the West Indies. Hort. Kew.

191. **Mamillaria pycnacantha,** Mart. in Act. Nov. Nat. Cur. xvi. pars 1, p. 325, t. 17; Bot. Mag. t. 3972; Pfeiffer & Otto, Abbild. i. t. 26.
Mamillaria latimamma, DC. Rev. p. 114?
South Mexico, near the city of Mexico, 7000 feet (*Karwinski*), Pachuca, 7500 feet, Regla, &c. (*Ehrenberg*), common between Tacubaya and Santa Fé (*Bourgeau*, 306). Hort. Kew.

192. **Mamillaria pyrrhocephala,** Scheidw. in Otto & Dietr. Allg. Gartz. ix. p. 42.
South Mexico, Real del Monte, above 6000 feet (*Galeotti*).

193. **Mamillaria pyrrhochroacantha,** Lem. Cact. Gen. Nov. et Sp. Hort. Monv. p. 51.
Mexico?

194. **Mamillaria quadrispina,** Mart. in Act. Nov. Nat. Cur. xvi. pars 1, p. 329.
South Mexico, Ismiquilpan (*Karwinski*).

195. **Mamillaria radians,** DC. Rev. Cact. p. 111; Salm Dyck, Cact. ed. 2, p. 105.
South Mexico, in the valley of Zimapan (*Ehrenberg*), without locality (*Coulter*). Hort. Kew.

Var. β. **globosa,** Scheidw. in Bull. Acad. Brux. v. p. 494.
Mexico.

196. **Mamillaria raphidacantha,** Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 34.
Mamillaria ancistracantha, Lem. loc. cit. p. 36.
Mamillaria clavata et *M. stipitata,* Scheidw. ex Labour. Cact. p. 128.
North Mexico, several varieties received from San Luis Potosi (*Ehrenberg*). Hort. Kew.

197. **Mamillaria recurva,** Lehm. ex Pfeiff. Enum. p. 15.
Mamillaria lehmannii, Hort., ex Pfeiff. loc. cit.
South Mexico, near Pachuca, at 7500 feet, near Los Baños de Atotonilco el Grande, at 6000 feet, near Zimapan, &c. (ex *Ehrenberg*).

198. **Mamillaria recurvispina,** Engelm. Cact. U.S. et Mex. Bound. Surv. p. 12.
North Mexico, eastern parts of Sonora Alta, especially in the Sierra del Pajarito (*Schott*).

199. **Mamillaria recurvispina,** Vriese in Tijdschrift Nat. Gesch. vi. p. 53, t. i. fig. 3.
Mexico.

200. **Mamillaria regia,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 269.
Mexico.

201. **Mamillaria retusa,** Hort. Belg., ex Pfeiff. in Otto & Dietr. Allg. Gartz. v. p. 369.
Mexico.

202. **Mamillaria rhodeocentra,** Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 52; Salm Dyck, Cact. ed. 2, p. 108.

MEXICO.

Var. β. **gracillima,** Scheer in Seem. Bot. Voy. 'Herald,' p. 288.

NORTH MEXICO, Chihuahua (*Potts*).

203. **Mamillaria rhodantha,** Link et Otto, Ic. Pl. Rar. t. 26; Salm Dyck, Cact. ed. 2, p. 97; Pfeiff. Enum. p. 31.

SOUTH MEXICO, frequent in the Peñon Grande, Peñon de los Baños, and many other places (*Ehrenberg*), Cerro de los Baños, near Mexico (*Bourgeau*, 47). Hort. Kew.

Pfeiffer (Enum. Diag. Cact. p. 31) makes the following varieties:—

Var. β. **prolifera.**

Var. γ. **andreæ,** Otto.

Mamillaria inuncta, Hffsg.?

Var. δ. **wendlandii.**

Mamillaria erinacea, Wendl. Cat. Hort. Herrenh. 1835.

Var. ε. **neglecta,** Hort. Berol.

Var. ζ. **rubens.**

Mamillaria pyramidalis, Hort. Berol.

204. **Mamillaria robustispina,** Schott, ex Engelm. Cact. U.S. et Mex. Bound. Surv. p. 11, t. 74. fig. 8.

NORTH MEXICO, on grassy prairies on the south side of the Barbuquibari Mountains, Sonora (*Schott*).

205. **Mamillaria rosea,** Scheidw. in Horticult. Belge, p. 118, t. 5, nec Galeotti.

MEXICO.

206. **Mamillaria rufidula,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 295; Walp. Ann. ii. p. 677.

MEXICO.

207. **Mamillaria rufocrocea,** Salm Dyck, Cact. ed. 2, p. 102.

MEXICO, near Las Ajuntas, on the Montezuma river (*Ehrenberg*).

208. **Mamillaria rüschiana,** Regel, Ind. Sem. Hort. Turic. 1850, Coll. p. 4, in adnot.

MEXICO.

209. **Mamillaria rutila,** Zucc., ex Pfeiff. Enum. p. 29.

MEXICO.

Var. β. **octospina,** Scheidw. in Bull. Acad. Brux. vi. p. 5.
MEXICO.

210. **Mamillaria salm-dyckiana,** Scheer in Otto & Dietr. Allg. Gartz. 1850; Seem. Bot. Voy. 'Herald,' p. 289.
NORTH MEXICO, Chihuahua (*Potts*).

211. **Mamillaria saxatilis,** Scheer in Seem. Bot. Voy. 'Herald,' p. 286.
NORTH MEXICO, crevices of rocks, Chihuahua (*Potts*).

212. **Mamillaria scepontocentra,** Lem. Cact. Gen. et Sp. Nov. p. 43.
SOUTH MEXICO, Oaxaca, on vegetable mould in the prairies near Pachuca, above 6000 feet (*Galeotti*).

213. **Mamillaria schaeferi,** Fennel in Otto & Dietr. Allg. Gartz. xv. p. 66.
MEXICO.

214. **Mamillaria scheerii,** Mühlpf. in Otto & Dietr. Allg. Gartz. xv. p. 97, t. 2; Engelm. Cact. U.S. et Mex. Bound. Surv. p. 10.
TEXAS.—NORTH MEXICO, Chihuahua (*Potts*); SOUTH MEXICO, Real del Monte.

215. **Mamillaria scheidweileriana,** Otto, ex Scheer in Seem. Bot. Voy. 'Herald,' p. 286.
NORTH MEXICO, Chihuahua (*Potts*), San Luis Potosi (*Ehrenberg*). Hort. Kew.

216. **Mamillaria schelhasii,** Pfeiffer, Cat. Hort. Monv. 1846.
SOUTH MEXICO, Mineral del Monte, Actopan, and Ismiquilpan (*Ehrenberg*).

217. **Mamillaria schiedeana,** Ehrb. in Salm Dyck, Cact. ed. 2, p. 85; Labour. Cact. p. 66.
Mamillaria sericata, Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 44.
SOUTH MEXICO, Mineral del Monte, on limestone, Puente de Dios, Barrancas near Mestitlan, 4000 to 5000 feet (*Ehrenberg*). Hort. Kew.

218. **Mamillaria schlechtendalii,** Ehrb. in Linnæa, xiv. p. 377.
MEXICO, near San Onofre, in the Mineral del Doctor (*Ehrenberg*). Hort. Kew.

219. **Mamillaria scolymoides,** Scheidw. in Otto & Dietr. Allg. Gartz. ix. p. 44.
Mamillaria daimonoceras, Lem., ex Salm Dyck, Cact. ed. 2, pp. 20 et 131.
MEXICO, received from San Luis Potosi (*Ehrenberg*), about Santa Rosa (*Bigelow*).

Var. β. **longiseta,** Salm Dyck, Cact. ed. 2, p. 132.

Var. γ. **nigricans,** Salm Dyck, loc. cit.

Var. δ. **raphidacantha,** Salm Dyck, loc. cit.

220. **Mamillaria seemannii,** Scheer in Seem. Bot. Voy. 'Herald,' p. 288.
NORTH MEXICO, Durango (*Seemann*).

221. **Mamillaria seidelii,** Tersch. Suppl. p. 1; Walp. Rep. ii. p. 301.

MEXICO.

222. **Mamillaria seitziana,** Mart. in Pfeiff. Enum. p. 18; Pfeiffer et Otto, Abbild. i. t. 8.

SOUTH MEXICO, Oaxaca (*Ehrenberg*), Ismiquilpan, above 8775 feet (*Karwinski*).

223. **Mamillaria sempervivi,** DC. Rev. Cact. p. 114; Mém. p. 13, t. 8.

Mamillaria caput-medusæ, Otto in Pfeiff. Enum. p. 22; Labour. Cact. p. 90.
Mamillaria diacantha, Lem. Cact. aliq. Nov. p. 2, ex Labour. Cact. p. 90.

SOUTH MEXICO, without locality (*Coulter*), in meadows and thickets near Zimapan, at 5000 to 5500 feet (*Ehrenberg*).

224. **Mamillaria senilis,** Lodd., ex Scheer in Seem. Bot. Voy. 'Herald,' p. 286.

NORTH MEXICO, on the tops of mountains near Chihuahua (*Potts*), Sierra Madre, on rocks (*Seemann*). Hort. Kew.

225. **Mamillaria setosa,** Pfeiff. in Otto & Dietr. Allg. Gartz. 1843, p. 379, et Enum. p. 30.

MEXICO, Barranca de las Majadas (*Ehrenberg*).

225*. **Mamillaria severini,** Regel et Klein, Ind. Sem. Hort. Petrop. 1860, p. 46.

MEXICO (*Karwinski*).

226. **Mamillaria simplex,** Haw. Synop. p. 177; DC. Mém. Cact. t. 7.

MEXICO (*Coulter*).

226*. **Mamillaria sororia,** Meinsh. in Koch's Wochenschrift, i. p. 28.

SOUTH MEXICO, Santa Barbara etc. (*Karwinski*).

227. **Mamillaria speciosa,** Vriese in Tijdschrift Nat. Gesch. vi. p. 52.

MEXICO.

228. **Mamillaria spectabilis,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiii. p. 346; Walp. Rep. v. p. 810.

SOUTH MEXICO, Real del Monte (ex *Mühlenpfordt*).

229. **Mamillaria sphacelata,** Mart. in Act. Nov. Nat. Cur. xvi. pt. 1, p. 339, t. 25. fig. 1.

SOUTH MEXICO, Zimapan (*Ehrenberg*). Hort. Kew.

230. **Mamillaria sphærotricha,** Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 33; Labour. Cact. p. 65.

Mamillaria candida, Scheidw. in Bull. Acad. Brux. v. p. 496, ex Salm Dyck, Cact. ed. 2, p. 8.

NORTH MEXICO, San Luis Potosi (*Galeotti*).

231. **Mamillaria sphærica,** Dietrich, ex Engelm. Cact. U.S. et Mex. Bound. Surv. p. 9.

TEXAS.—NORTH MEXICO, valley of the Rio Grande (*Schott*).

232. **Mamillaria spinaurea,** Salm Dyck in Otto & Dietr. Allg. Gartz. 1850, p. 50; Scheer in Seem. Bot. Voy. 'Herald,' p. 288.
NORTH MEXICO, probably Sonora or Durango (*Potts*).

233. **Mamillaria spinosissima,** Lem. Cact. aliq. Nov. Hort. Monv. fasc. i. p. 4.
MEXICO. Hort. Kew.

233*. **Mamillaria squarrosa,** Meinsh. in Koch's Wochenschrift, ii. p. 116.
MEXICO (*Karwinski*).

234. **Mamillaria stella-aurata,** Mart. in Zucc. Pl. Nov. fasc. iii. p. 101.
SOUTH MEXICO, Zimapan (*Ehrenberg*). Hort. Kew.

235. **Mamillaria stenocephala,** Scheidw. in Otto & Dietr. Allg. Gartz. ix. p. 43.
SOUTH MEXICO, in shady forest, under large pine and yew trees, on the Cerro de la Puerta de la Palma, between Zimapan and Jacola (*Ehrenberg*).

236. **Mamillaria strobiliformis,** Scheer, ex Salm Dyck, Cact. ed. 2, p. 104.
NORTH MEXICO, Chihuahua (*Potts*).

237. **Mamillaria stüberi,** Först. Handb. p. 517; Salm Dyck, Cact. ed. 2, p. 95.
Mamillaria imbricata, Wegener, ex Salm Dyck, loc. cit. p. 11.
MEXICO.

238. **Mamillaria subangularis,** DC. Rev. Cact. p. 112, et Mém. p. 10.
MEXICO, without locality (*Coulter*). Hort. Kew.

239. **Mamillaria subcrocea,** DC. Rev. Cact. p. 110.
MEXICO, near Las Ajuntas, on the Montezuma river (*Ehrenberg*), without locality (*Coulter*). Hort. Kew.

240. **Mamillaria subechinata,** Salm Dyck, Cact. ed. 2, p. 101.
SOUTH MEXICO, near Las Ajuntas, on the Montezuma river (*Ehrenberg*).

241. **Mamillaria subpolyedra,** Salm Dyck, Hort. Dyck. p. 343; Cact. ed. 2, p. 120.
Mamillaria polygona, Zucc., ex Pfeiff. Enum. p. 17.
SOUTH MEXICO, near Zimapan and Ismiquilpan, at the upper limits of the temperate regions (*Ehrenberg*).

242. **Mamillaria subtetragona,** A. Dietr. in Otto & Dietr. Allg. Gartz. viii. p. 169.
MEXICO.

243. **Mamillaria subulifera,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 242; Walp. Ann. ii. p. 274.
MEXICO.

244. **Mamillaria (Anhalonium) sulcata,** Salm Dyck, Cact. ed. 2, p. 78.
Anhalonium kotchubeyi, Lem., ex Salm Dyck, loc. cit. p. 5.
MEXICO (*Karwinski*).

245. **Mamillaria sulcolonata,** Lem. Ic. Cact. livr. 8.
Mamillaria retusa, Scheidw. ex Labour. Cact. p. 136.
SOUTH MEXICO, Mineral del Monte (*Galeotti*), received from the State of Oaxaca (*Ehrenberg*).

246. **Mamillaria supertexta,** Mart. ex Pfeiff. Enum. p. 25.
MEXICO, near San José del Oro, at nearly 13,000 feet altitude.

247. **Mamillaria tentaculata,** Hort. Berol., ex Pfeiff. Enum. p. 29.
Mamillaria pulchra, Haw. Bot. Reg. t. 1329 ?, ex Pfeiff. loc. cit.
MEXICO.

248. **Mamillaria tenuis,** DC. Rev. Cact. p. 110, et Mém. t. 1 ; Bot. Reg. t. 1523 ; Bot. Mag. t. 3646.
SOUTH MEXICO, Zimapan (*Ehrenberg*).

249. **Mamillaria tetracantha,** Salm Dyck, Cact. ed. 2, pp. 16 et 114, et in Pfeiff. Enum. p. 18 ; Bot. Mag. t. 4060.
MEXICO. Hort. Kew.

250. **Mamillaria tetracentra,** Hort. Berol., ex Salm Dyck, Cat. ed. 2, p. 112 ; Labouret, Cact. p. 53.
MEXICO.

251. **Mamillaria texensis,** Labouret, Cact. p. 89.
Mamillaria lindheimeri, Engelm.
TEXAS.—NORTH MEXICO, Saltillo.

252. **Mamillaria tomentosa,** Ehrb. in Otto & Dietr. Allg. Gartz. 1849, p. 262.
MEXICO.

253. **Mamillaria triacantha,** DC. Rev. Cact. p. 113.
MEXICO, without locality (*Coulter*).

254. **Mamillaria tuberculosa,** Englm. Cact. U.S. et Mex. Bound. Surv. p. 14, t. 10. figg. 1–6.
TEXAS.—NORTH MEXICO (*Bigelow*).

255. **Mamillaria turbinata,** Hook. Bot. Mag. t. 3984.
MEXICO.

256. **Mamillaria uberiformis,** Zucc. in Pfeiff. Enum. p. 23 ; Pfeiff. et Otto, Abbild. i. t. 13.
SOUTH MEXICO, in meadows near Pachuca, between 7000 and 8000 feet (*Karwinski*).

257. **Mamillaria umbrina,** Ehrb. in Otto & Dietr. Allg. Gartz. 1849, p. 287.
MEXICO.

258. **Mamillaria uncinata,** Zucc. in Pfeiff. Enum. p. 34; Pfeiff. et Otto, Abbild. i. t. 19.
Mamillaria adunca, Scheidw.
MEXICO, meadows near Pachuca, 7500 feet, Cerro Ventoso, near Mineral del Monte, 8500 feet (*Karwinski*).

259. **Mamillaria variamamma,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 242; Walp. Ann. ii. p. 675.
MEXICO.

260. **Mamillaria versicolor,** Scheidw. in Bull. Acad. Brux. v. p. 494; Walp. Rep. ii. p. 299.
MEXICO.

261. **Mamillaria vetula,** Mart. in Act. Nov. Nat. Cur. xvi. pt. 1, p. 338, t. 24.
MEXICO, on rocks near San José del Oro, 13,000 feet (*Karwinski*), chalk cliffs at La Encarnacion, 11,000 feet (*Ehrenberg*).

262. **Mamillaria villifera,** Otto in Pfeiff. Enum. p. 18.
MEXICO, Oaxaca (*Ehrenberg*).

263. **Mamillaria virens,** Scheidw. in Otto & Dietr. Allg. Gartz. ix. p. 43.
MEXICO, Oaxaca (*Ehrenberg*).

264. **Mamillaria viridis,** Salm Dyck, Cact. ed. 2, p. 116.
Mamillaria prælii, Mühlpf. in Otto & Dietr. Allg. Gartz. xiv. p. 372, ex Salm Dyck, loc. cit.
MEXICO.

265. **Mamillaria vivipara,** Haw. Suppl. p. 2.

Var. β. **neo-mexicana,** Engelm. Cact. U.S. et Mex. Bound. Surv. p. 16.
TEXAS; NEW MEXICO.—NORTH MEXICO, Sonora (*Schott*).
A variable species, extending northward to the Upper MISSOURI and YELLOWSTONE rivers and the BLACK HILLS and ROCKY MOUNTAINS.

266. **Mamillaria vulpina,** Ehrb. in Otto & Dietr. Allg. Gartz. xvii. p. 308; Walp. Ann. ii. p. 678.
MEXICO.

267. **Mamillaria webbiana,** Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 45.
MEXICO, near San Toro and on the Mesa de la Magdalena (*Ehrenberg*).

268. **Mamillaria wegenerii,** Ehrb. in Bot. Zeit. i. p. 738.
SOUTH MEXICO, Oaxaca (ex *Ehrenberg*).

269. **Mamillaria wildiana,** Otto ex Pfeiff. Enum. p. 37.

Mexico, collected on the Rio Grande at an altitude of 5000 to 5500 feet on lava and basalt, and here and there on trees of *Prosopis* and *Acacia* (*Ehrenberg*). Hort. Kew.

This is probably the Rio Grande in the State of Oaxaca.

270. **Mamillaria winklerii,** Först. in Otto & Dietr. Allg. Gartz. xv. p. 50.

Mexico. Hort. Kew.

271. **Mamillaria woburnensis,** Scheer in Hook. Lond. Journ. Bot. iv. p. 136.

Guatemala.

272. **Mamillaria wrightii,** Engelm. Cact. U.S. et Mex. Bound. Surv. p. 7, t. 8. figg. 1–8; Engelm. et Bigel. Pacif. Railr. Rep. Cact. p. 27.

Texas.—North Mexico, Santa-Rita-del-Cobre Mountains, near Lake Santa Maria, Chihuahua (*Wright & Bigelow*).

273. **Mamillaria xanthotricha,** Scheidw. in Otto & Dietr. Allg. Gartz. viii. p. 338; Walp. Rep. ii. p. 298.

South Mexico, Oaxaca (ex *Ehrenberg*).

274. **Mamillaria zephyranthoides,** Scheidw. in Otto & Dietr. Allg. Gartz. ix. p. 41; Pfeiff. et Otto, Abbild. ii. t. 8.

Mamillaria fennelii, Hopfer in Otto & Dietr. Allg. Gartz. xi. p. 3.

South Mexico, Oaxaca, between 7000 and 8000 feet (*Galeotti, Ehrenberg*).

275. **Mamillaria zepnickii,** Ehrb. in Bot. Zeit. ii. p. 835.

Mexico.

276. **Mamillaria zuccariniana,** Mart. in Act. Nov. Nat. Cur. xvi. pars 1, p. 331, t. 20.

Mamillaria macracantha, DC. Mém. Cact. t. 9.

Mexico, Ismiquilpan (*Karwinski*).

The following are described without names in Seemann's 'Botany of the Voyage of the "Herald"':—

Mamillaria, sp. (aff. *M. parvimammæ*), Scheer in Seem. Bot. Voy. 'Herald,' p. 287.

North Mexico, Chihuahua (*Potts*).

Mamillaria, sp. (aff. *M. simili*), Scheer in Seem. Bot. Voy. 'Herald,' p. 287.

North Mexico, Chihuahua (*Potts*).

Mamillaria, sp. (aff. *M. nivosæ*), Scheer in Seem. Bot. Voy. 'Herald,' p. 287.

North Mexico, Chihuahua (*Potts*).

Mamillaria, sp., Scheer in Seem. Bot. Voy. 'Herald,' p. 287.

North Mexico, Chihuahua (*Potts*, 235).

Mamillaria, sp. (aff. *M. formosæ*), Scheer in Seem. Bot. Voy. 'Herald,' p. 287.
North Mexico, near Chihuahua (*Potts*).

Mamillaria, sp. Scheer in Seem. Bot. Voy. 'Herald,' p. 287.
North Mexico, near Chihuahua (*Potts*, 226).

3. PELECYPHORA.

Pelecyphora, Ehrb. in Bot. Zeit. i. p. 737; Benth. et Hook. Gen. Plant. i. p. 848.

Only one species described.

1. **Pelecyphora ascelliformis,** Ehrb. in Bot. Zeit. i. p. 737.
Mexico (*Ehrenberg*).

4. LEUCHTENBERGIA.

Leuchtenbergia, Hook. Bot. Mag. sub tab. 4393; Benth. et Hook. Gen. Plant. i. p. 848.

Monotypic.

1. **Leuchtenbergia principis,** Hook. Bot. Mag. t. 4393.
South Mexico, neighbourhood of Real del Monte (*Taylor*).

5. ECHINOCACTUS.

Echinocactus, Link et Otto in Verhandl. Preuss. Gartenb. Verein, iii. p. 420, t. 13 ad 20, 22 ad 24, 26 et 27; Benth. et Hook. Gen. Plant. i. p. 848.

About 200 forms have been described. They are dispersed from Texas and California to Peru and Brazil, but are most numerous in Mexico.

1. **Echinocactus acifer,** Hopf., ex Labour. Cact. p. 226.
Echinocactus wippermannii, Mühlpf. in Otto & Dietr. Allg. Gartz. 1845, p. 370, ex Labour, loc. cit.
Echinocactus spinosus, Wegener in Otto & Dietr. Allg. Gartz. 1844, p. 66, ex Labour. loc. cit.

Mexico, Real del Monte (ex *Labouret*), several varieties growing in red lava near Estanijas (*Ehrenberg*).

Salm Dyck (Cact. ed. 2, p. 162) maintains the name *E. wippermannii*, Mühlpf.

2. **Echinocactus acroacanthus,** Stieber in Bot. Zeit. v. p. 491.
Mexico.

3. **Echinocactus adversispinus,** Mühlpf. in Otto & Dietr. Allg. Gartz. xvi. p. 10; Walp. Ann. ii. p. 682.
Mexico.

4. **Echinocactus albatus,** A. Dietr. in Otto & Dietr. Allg. Gartz. xiv. p. 170.
Mexico.

5. **Echinocactus allardtianus,** A. Dietr. in Otto & Dietr. Allg. Gartz. xv. p. 178.
Mexico.

6. **Echinocactus anfractuosus,** Mart. in Pfeiff. Enum. p. 63.

South Mexico, near Pachuca (*Karwinski*). Hort. Kew.

7. **Echinocactus arachnoideus,** Scheidw. in Bull. Acad. Brux. vi. p. 4.

Mexico.

8. **Echinocactus arrigens,** Link in Otto & Dietr. Allg. Gartz. viii. p. 161; Pfeiff. et Otto, Abbild. ii. t. 27.

Echinocactus xiphacanthus, Miq. in Linnæa, xii. p. 1?

Mexico, Zimapan (*Ehrenberg*).

9. **Echinocactus aulacogonus,** Lem. Cact. aliq. Nov. Hort. Monv. p. 14.

Mexico? Hort. Kew.

10. **Echinocactus bicolor,** Galeotti in Pfeiff. & Otto, Abbild. ii. t. 25; Labour. Cact. p. 259; Engelm. Cact. U.S. et Mex. Bound. Surv. p. 27.

Texas.—North Mexico, Chihuahua (*Potts*). First introduced into Europe by *Galeotti*, but the habitat not recorded. Hort. Kew.

11. **Echinocactus brachycentrus,** Salm Dyck, Cact. ed. ii. p. 160.

Mexico.

12. **Echinocactus ? cereiformis,** DC. Rev. Cact. p. 115.

Mexico, without locality (*Coulter*).

13. **Echinocactus chlorophthalmus,** Hook. Bot. Mag. t. 4373.

Mexico, Real del Monte (ex *Hooker*).

14. **Echinocactus concinnus,** Hook. Bot. Mag. t. 4115.

Mexico?

14*. **Echinocactus conothelos,** Regel et Klein, Ind. Sem. Hort. Petrop. 1860, p. 48.

Mexico (*Karwinski*).

15. **Echinocactus coptogonus,** Lem. Cact. Gen. et Sp. Nov. p. 87; Icon. Cact. iii. t. 1; Pfeiff. & Otto, Abbild. ii. t. 19.

Echinocactus interruptus, Sch.

North Mexico, La Concepcion, San Luis Potosi (*Ehrenberg*); South Mexico, Mineral del Monte (ex *Pfeiffer & Otto*), in the plains near Pachuca (*Ehrenberg*).

16. **Echinocactus cornigerus,** DC. Rev. Cact. p. 36, t. 7, et Mém. Cact. t. 10.

South Mexico, between the city of Mexico and Pachuca (*Ehrenberg*), Mount Zacualco near Guadalupe, valley of Mexico (*Bourgeau*, 1183); Guatemala (ex *De Candolle*).

17. **Echinocactus corynodes,** Hort. Berol., ex Pfeiff. Enum. p. 55; Bot. Mag. t. 3906.

Echinocactus acutangulus, Zucc., ex Pleiff. loc. cit.
Malacocarpus corynodes, Salm Dyck, Cat. ed. 2, p. 141.

According to Labouret (Cact. p. 169) this species is a native of MEXICO and MONTE VIDEO; but this appears to be very doubtful.

18. **Echinocactus crispatus**, DC. Rev. Cact. p. 37, t. 8.
SOUTH MEXICO, near Pachuca, Zimapan, &c. (*Coulter*, *Ehrenberg*).

β. **horridus**, DC. loc. cit. p. 115.
GUATEMALA.

19. **Echinocactus debilispinus**, Bergm. in Otto & Dietr. Allg. Gartz. viii. p. 131.
MEXICO.

20. **Echinocactus dichroacanthus**, Mart. in Pfeiff. Enum. p. 62.
MEXICO, near Zimapan.

21. **Echinocactus echidne**, DC. Mém. Cact. p. 19, t. 11; Salm Dyck, Cact. ed. 2, pp. 27, 150.
Echinocactus dolichacanthus, Lem., et *Echinocactus vanderæyi*, Lem., ex Salm Dyck, loc. cit. p. 27.
SOUTH MEXICO, Mestitlan and Zimapan &c. (*Ehrenberg*), without locality (*Coulter*). Hort. Kew.

22. **Echinocactus ehrenbergii**, Pfeiff., ex Labour. Cact. p. 263.
SOUTH MEXICO, Mineral del Monte (ex *Pfeiffer*), in the valleys of Zimapan, Ismiquilpan, &c. (*Ehrenberg*).

23. **Echinocactus electracanthus**, Lem. Cact. aliq. Nov. Hort. Monv. p. 24.
MEXICO, near San Bartolo, San Sebastian, Barranca of Mestitlan &c., 6000 feet (ex *Ehrenberg*). Hort. Kew.

24. **Echinocactus emoryi**, Engelm. in Emory's Rep. 1848, et in Pacif. Railr. Rep. Cact. p. 31, t. 3. fig. 3, et in Cact. U.S. et Mex. Bound. Surv. p. 23, t. 28.
CALIFORNIA.—NORTH MEXICO, Punta de Agua, Sierra del Pajarito, Sierra de Sonoita, &c., Sonora (*Schott*).

25. **Echinocactus ensiferus**, Lem. Cact. aliq. Nov. Hort. Monv. p. 26.
MEXICO.

26. **Echinocactus exsculptus**, Otto, ex Pfeiff. Enum. p. 65.
Echinocactus subgibbosus, Haw., ex Pfeiff. loc. cit.
MEXICO.—CHILI; MONTE VIDEO (ex *Pfeiffer*).

27. **Echinocactus eyriesii**, Turp. Observ. p. 58, t. 2; Bot. Reg. t. 1707; Bot. Mag. t. 3411; Pfeiff. Enum. p. 72.
MEXICO (*Lubbock*).—BUENOS AYRES (ex *Pfeiffer*).
Lindley (loc. cit.) distinctly states that this species was procured from Mexico by Sir John Lubbock; but Pfeiffer gives Buenos Ayres as the native country.

27*. **Echinocactus flavispinus,** Meinsh. in Koch's Wochenschrift, i. p. 28.

Mexico, El Limon (*Karwinski*).

28. **Echinocactus flavovirens,** Scheidw. in Otto & Dietr. Allg. Gartz. ix. p. 50.

Echinocactus polycentrus, Lem.
Echinocactus orthacanthus, Link et Otto.

South Mexico, Tehuacan.

29. **Echinocactus flexispinus,** Salm Dyck, Cact. p. 159.

Echinocactus undulatus, Dietr.? ex Salm Dyck.

Mexico (*Ehrenberg*).

30. **Echinocactus försterii,** Stieber in Bot. Zeit. v. p. 491.

Mexico.

31. **Echinocactus fossulatus,** Scheidw. in Otto & Dietr. Allg. Gartz. ix. p. 49; Pfeiff. & Otto, Abbild. ii. t. 13.

Echinocactus hexædrophorus, Lem. Cact. Gen. p. 17?
Echinocactus insculptus, Scheidw. in Horticult. Belg. 1837, t. 7?

North Mexico, San Luis Potosi.

32. **Echinocactus galeottii,** Scheidw. in Otto & Dietr. Allg. Gartz. ix. p. 50; Walp. Rep. ii. p. 319.

Mexico.

33. **Echinocactus gibbosus,** DC. Prodr. iii. p. 461.

Cactus gibbosus, Haw. Bot. Reg. t. 137.
Cereus reductus, Link, Enum. ii. p. 21.
Gymnocalycinum reductum, Pfeiff. & Otto, Abbild. ii. t. 12.

Mexico; Guatemala.—Jamaica. Hort. Kew.

34. **Echinocactus gilvus,** A. Dietr. in Otto & Dietr. Allg. Gartz. xiii. p. 170.

South Mexico, Mestitlan and Zimapan (*Ehrenberg*).

Salm Dyck (Cact. ed. ii. p. 150) thought this might be a variety of *E. echidne.*

35. **Echinocactus ghiesbreghtianus,** Lem. Hort. Univ. p. 227, t. 5.

Mexico.

36. **Echinocactus ghiesbreghtii,** Salm Dyck in Otto & Dietr. Allg. Gartz. xviii. p. 395.

North Mexico, on the Rio Grande del Norte.

37. **Echinocactus gladiatus,** Link et Otto in Verhandl. des Gartenb.-Vereins für Preuss. iii. p. 426, t. 17; Walp. Rep. ii. p. 310.

Mexico.

38. **Echinocactus glaucescens,** DC. Rev. Cact. p. 115.

Mexico, without locality (*Coulter*).

39. **Echinocactus grandicornis,** Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 30.
South Mexico, Zimapan (*Ehrenberg*).

40. **Echinocactus hæmatochroanthus,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiv. p. 371.
Mexico.

41. **Echinocactus helophorus,** Lem. Cact. Gen. et Sp. Nov. p. 12.
North Mexico, received from San Luis Potosi (*Ehrenberg*).

42. **Echinocactus heteracanthus,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiii. p. 345; Walp. Rep. v. p. 814.
Mexico, Real del Monte (ex *Mühlenpfordt*).

43. **Echinocactus hexacanthus,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiv. p. 369.
Mexico.

44. **Echinocactus hexædrophorus,** Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 27; Bot. Mag. t. 4311.
Echinocactus fossulatus, Scheidw. ex Salm Dyck, Cact. ed. 2, p. 34.
North Mexico, San Luis Potosi (*Ehrenberg*). Hort. Kew.

45. **Echinocactus hexædrus,** Scheidw. in Bull. Acad. Brux. vi. p. 3.
North Mexico, San Luis Potosi.

46. **Echinocactus heyderi,** A. Dietr. in Otto & Dietr. Allg. Gartz. xiv. p. 170.
Mexico.

47. **Echinocactus histricacanthus,** Lem. Cact. Gen. Nov. Hort. Monv. p. 17.
North Mexico, received from San Luis Potosi (*Ehrenberg*). Hort. Kew.

48. **Echinocactus histrix,** DC. Rev. Cact. p. 115.
Mexico, without locality (*Coulter*).
Pfeiffer refers this, with a query, to *E. oxypterus*, Zucc.

49. **Echinocactus hookeri,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiii. p. 345; Walp. Rep. v. p. 811.
South Mexico, Real del Monte (ex *Mühlenpfordt*).

50. **Echinocactus horizonthalionis,** Lem. Iconog. Cact. livr. 2; Engelm. Cact. U.S. et Mex. Bound. Surv. p. 26, t. 31 et 32. figg. 1–5.
Echinocactus equitans, Scheidw. ex Scheer in Seem. Bot. Voy. 'Herald,' p. 290.
Texas.—North Mexico, near Chihuahua (*Potts*).

Var. β. **curvispina,** Salm Dyck, Scheer in Seem. Bot. Voy. 'Herald,' p. 290.
North Mexico, abundant in sandy plains, Chihuahua (*Potts*).

51. **Echinocactus horripilus,** Lem., ex Labour. Cact. p. 264.

Echinocactus cæspititius, Pfeiff., ex Labour. loc. cit.

South Mexico, on the slopes of the Barrancas of Mestitlan and Zimapan, 4000 to 5000 feet (*Ehrenberg*). Hort. Kew.

52. **Echinocactus hystrichodes,** Lem. Cact. Gen. et Sp. Nov. in Hort. Monv. p. 17; Labour. Cact. p. 215.

Echinocactus obvallatus, β. spinosior, Lem., ex Labour. loc. cit.

Mexico.

53. **Echinocactus ingens,** Zucc. in Pfeiff. Enum. p. 54.

Melocactus ingens, Karw., ex Pfeiff. loc. cit.

Echinocactus karwinskii, Zucc., ex Labour. Cact. p. 193.

South Mexico, Zimapan, Ismiquilpan, Mestitlan, San Pedrito, &c., 4000 to 6000 feet (ex *Ehrenberg*). Hort. Kew.

See note under *E. platyceras.*

54. **Echinocactus insculptus,** Scheidw. in Bull. Acad. Brux. vi. p. 2; Walp. Rep. ii. p. 323.

Mexico.

55. **Echinocactus intertextus,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 27, t. 34 et 35. figg. 1–5, et Synop. p. 21.

Echinocactus unguispinus, Engelm.

Texas.—North Mexico, Chihuahua (*Wislizenus*).

56. **Echinocactus irroratus,** Scheidw. in Bull. Acad. Brux. vi. p. 3.

Mexico.

57. **Echinocactus karwinskii,** Zucc., ex Pfeiff. Enum. p. 50.

Mexico.

58. **Echinocactus lamellosus,** A. Dietr. in Otto & Dietr. Allg. Gartz. xv. p. 177.

Mexico.

59. **Echinocactus lancifer,** Reich. in Terscheck's Suppl. Cact. p. 2.

Echinocactus obvallatus, Pfeiff. & Otto, Abbild. ii. t. 22.

North Mexico, Pelago, between Chihuahua and Parras (*Wislizenus*).

60. **Echinocactus latisipinus,** Haw. in Phil. Mag. lxiii. p. 41, sub *Cacto.*

North Mexico, San Luis Potosi (*Ehrenberg*).

DeCandolle thought this might be the same as his *E. cornigerus*; but Ehrenberg (Linnæa, xix. p. 356) states that it is different.

61. **Echinocactus lecontei,** Engelm. in Pacif. Railr. Rep. p. 29, t. 2. figg. 3–5, et Cact. U.S. & Mex. Bound. Surv. p. 23, t. 27.

California, New Mexico.—North Mexico, Sonora (*Le Conte, Schott*).

62. **Echinocactus leucanthus,** Zucc. in Act. Acad. Bav. 1837, ii. p. 729, t. 2. fig. 10; Pfeiff. Enum. p. 66; Pfeiff. & Otto, Abbild. i. t. 14.

Echinocactus tuberosus, Salm Dyck, ex Labour. Cact. p. 261.

Echinocactus subporrectus, Lem., ex Labour. loc. cit.

South Mexico, Zimapan (*Karwinski*), Ismiquilpan (*Ehrenberg*).

63. **Echinocactus linkeanus,** A. Dietr. in Otto & Dietr. Allg. Gartz. xvi. p. 298.

Mexico.

64. **Echinocactus linkii,** Lehm. in Act. Nov. Nat. Cur. xvi. pt. 1, p. 316, t. 14; Walp. Rep. ii. p. 310.

Mexico. Hort. Kew.

65. **Echinocactus longihamatus,** Galeotti, in Förster's Handb. p. 321 (absque descr.) et in Pfeiff. & Otto, Abbild. ii. t. 16; Scheer, in Seem. Bot. Voy. 'Herald,' p. 290; Engelm. Cact. U.S. & Mex. Bound. Surv. p. 22, t. 21–24; Bot. Mag. t. 4632.

Texas.—North Mexico, Chihuahua (*Potts*); South Mexico. Hort. Kew.

66. **Echinocactus lophothele,** Salm Dyck in Otto & Dietr. Allg. Gartz. xviii. p. 395; Scheer, in Seem. Bot. Voy. 'Herald,' p. 291.

North Mexico, Chihuahua (*Potts*).

67. **Echinocactus macracanthus,** Vriese, in Tijdschrift Nat. Gesch. vi. p. 49, t. 2.

Mexico.

68. **Echinocactus macrocephalus,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiv. p. 370.

Mexico.

69. **Echinocactus macrodiscus,** Mart. in Act. Nov. Nat. Cur. pt. 1, p. 341, t. 26.

Echinocactus campylacanthus, Scheidw. ex Salm Dyck, Cact. ed. 2, p. 28.

North Mexico, San Luis Potosi (*Galeotti*); South Mexico, on the Cumbre, at about 10,000 feet, in a place called El Renosco (*Karwinski*). Hort. Kew.

70. **Echinocactus macleanii,** Salm Dyck, Cat. 1844, ex Labour. Cact. p. 263.

Mexico.

71. **Echinocactus melocactiformis,** DC. Rev. Cact. p. 38, t. 10.

Mexico (*Moçino & Sessé*).

72. **Echinocactus mühlenpfordtii,** Fennel, in Otto & Dietr. Allg. Gartz. xv. p. 65.

Mexico.

73. **Echinocactus multiflorus,** Hook. Bot. Mag. t. 4181.

Mexico? Hort. Kew.

74. **Echinocactus myriostigma,** Salm Dyck, Cact. ed. 2, pp. 29, 155; Bot. Mag. t. 4177; Ill. Hort. t. 292.

Astrophytum myriostigma, Lem.

North Mexico, San Luis Potosi (*F. Staines*). Hort. Kew.

74*. **Echinocactus nodosus,** Linke in Koch's Wochenschrift, i. p. 85.

Mexico.

75. **Echinocactus obvallatus,** DC. Prodr. iii. p. 462; Rev. Cact. p. 37, t. 9; Pfeiff. & Otto, Abbild. ii. t. 22.

South Mexico, Zimapan, Tepenexcomitl (*Ehrenberg*). Hort. Kew.

76. **Echinocactus octacanthus,** Mühlpf., in Otto & Dietr. Allg. Gartz. xvi. p. 10; Walp. Ann. ii. p. 681.

Mexico.

77. **Echinocactus oligacanthus,** Mart. in Pfeiff. Enum. p. 53.

Mexico.

78. **Echinocactus ornatus,** DC. Rev. Cact. p. 114.

Echinocactus holopterus, Miq., ex Salm Dyck, Cact. ed. 2, p. 27.

Echinocactus mirbelii, Lem., ex Salm Dyck, Cact. ed. 2, p. 27.

Echinocactus tortus, Scheidw., ex Labour. Cact. p. 182.

South Mexico, Zimapan and Las Ajuntas on the Montezuma river, &c. (*Ehrenberg*). Hort. Kew.

79. **Echinocactus ottonis,** Lehm. in Act. Nov. Nat. Cur. xvi. pt. 1, p. 317, t. 15; Bot. Mag. t. 3107.

Mexico?—Brazil. Hort. Kew.

80. **Echinocactus oxypterus,** Zucc. in Pfeiff. Enum. p. 57.

South Mexico, Santa Rosa de Toliman (*Karwinski*).

81. **Echinocactus pachycornis,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiv. p. 371.

Mexico.

82. **Echinocactus pentacanthus,** Lem. Cact. aliq. Nov. Hort. Monv. p. 27.

South Mexico, Pachuca and Los Baños del Grande (*Ehrenberg*).

83. **Echinocactus parryi,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 25, t. 32. figg. 6, 7.

North Mexico, desert region south-west of El Paso towards Lake Guzman (*Parry, Wright, Bigelow*).

84. **Echinocactus pentlandii,** Hook. Bot. Mag. t. 4124.

Mexico?

85. **Echinocactus pectiniferus,** Lem. Cact. Gen. et Sp. Nov. p. 25; Bot. Mag. t. 4190.

North Mexico, San Luis Potosi (*Staines*).

86. **Echinocactus pfeifferi,** Zucc. in Act. Acad. Bavar. 1837, ii. p. 724, t. 5; Pfeiff. Enum. p. 58; Pfeiff. & Otto, Abbild. ii. t. 2.

Echinocactus mamillarioides, Hook.

Echinocactus theiacanthus, Lem. Cact. Gen. &c. p. 86.

Echinocactus theionacanthus, Lem. Cact. Nov. fasc. i. p. 20.

South Mexico, on rocks near Toliman (*Karwinski*), near Jicuico, Mestitlan, Toliman, and Zimapan (ex *Ehrenberg*). Hort. Kew.

87. **Echinocactus phyllacanthus,** Mart. in Otto & Dietr. Allg. Gartz. 1836, p. 201; Pfeiff. & Otto, Abbild. i. t. 9.

Echinocactus phyllantoides, Lem., ex Labour. Cact. p. 211.

South Mexico, near Pachuca, above 6000 feet (*Karwinski*), Mestitlan (*Ehrenberg*).

88. **Echinocactus pilosus,** Galeotti in Salm Dyck, Cact. ed. 2, p. 148.

Echinocactus piliferus, Lem., ex Labour. Cact. p. 186.

Mexico? Hort. Kew.

89. **Echinocactus platyacanthus,** Link & Otto, in Verhandl. des Gartenb.-Vereins für Preuss. iii. p. 423, t. 14; Pfeiff. Enum. p. 59.

Mexico (*Schiede*), near Actopan, Ismiquilpan, Zimapan, Mestitlan, &c. (ex *Ehrenberg*).

90. **Echinocactus platyceras,** Lem. Cact. Hort. Monv., ex Labour. Cact. p. 192; Salm Dyck, Cact. ed. 2, p. 147.

Mexico, Actopan, Zimapan, &c. (ex *Ehrenberg*). Hort. Kew.

Ehrenberg (Linnæa, xix. p. 356) seems to have regarded this and *E. karwinskii,* Lem., as the same as *E. platyacanthus.*

91. **Echinocactus pottsii,** Salm Dyck, in Otto & Dietr. Allg. Gartz. 1850; Scheer, in Seem. Bot. Voy. 'Herald,' p. 291.

North Mexico, Chihuahua (*Potts*).

92. **Echinocactus porrectus,** Lem., ex Labour. Cact. p. 262; Salm Dyck, Cact. ed. 2, p. 172.

Mexico.

93. **Echinocactus polycephalus,** Engelm. & Bigelow, in Pacif. Railr. Rep., et in Cact. U.S. & Mex. Bound. Surv. p. 25.

California.—North Mexico, Sonora (*Schott*).

94. **Echinocactus pruinosus,** Otto, ex Pfeiff. Enum. p. 54.

Cereus pruinosus, Salm Dyck, Cact. ed. 2, p. 47.

Mexico.

94*. **Echinocactus pseudo-cereus,** Meinsh. in Koch's Wochenschrift, i. p. 29.

MEXICO ?

95. **Echinocactus recurvus,** Link & Otto, in Verhandl. des Gartenb.-Vereins für Preuss. iii. p. 426, t. 20.

Cactus recurvus, Haw. Synops. p. 173.

Echinocactus glaucus, Karw., ex Pfeiff. Enum. p. 57.

SOUTH MEXICO, received from Oaxaca (*Ehrenberg*).—PERU.

96. **Echinocactus quadrinatus,** Wegener in Otto & Dietr. Allg. Gartz. xii. p. 66.

NORTH MEXICO, received from San Luis Potosi (*Ehrenberg*).

Salm Dyck (Cact. ed. 2, p. 31) reduces this to *E. wegeneri.*

97. **Echinocactus reichenbachii,** Terscheck, Suppl. Cact. p. 2; Walp. Rep. ii. p. 320.

MEXICO.

98. **Echinocactus rhodophthalmus,** Hook. Bot. Mag. t. 4486.

NORTH MEXICO, San Luis Potosi (*Staines*).

Var. **elliptica,** Hook. Bot. Mag. t. 4634.

MEXICO.

99. **Echinocactus robustus,** Pfeiff. Enum. p. 61.

SOUTH MEXICO, Oaxaca, Tehuacan (*Karwinski*).

Var. β. **prolifera,** Pfeiff. loc. cit.

SOUTH MEXICO (*Karwinski*)

Var. γ. **monstrosa,** Pfeiff. loc. cit.

A cultivated variety.

100. **Echinocactus scheerii,** Salm Dyck, Cact. ed. 2, p. 155.

NORTH MEXICO, near Chihuahua (*Potts*).

101. **Echinocactus sclerothrix,** Lehm. in Linnæa, xiii. Litteraturb. p. 101.

MEXICO.

101*. **Echinocactus setosus,** Linke in Koch's Wochenschrift, i. p. 86.

MEXICO.

102. **Echinocactus sinuatus,** Dietr., ex Engelm. Cact. U.S. & Mex. Bound. Surv. p. 21, t. 74. figg. 11–14.

TEXAS.—NORTH MEXICO (*Schott*). Hort. Kew.

103. **Echinocactus smithii,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiv. p. 370.

MEXICO.

104. **Echinocactus solenacanthus,** Scheidw. in Otto & Dietr. Allg. Gartz. ix. p. 50; Walp. Rep. ii. p. 319.

MEXICO, at 5000 to 6000 feet (ex *Scheidweiler*).

105. **Echinocactus sphærocephalus,** Mühlpf. in Otto & Dietr. Allg. Gartz. xiv. p. 370.

MEXICO.

106. **Echinocactus spina-christi,** Zucc. in Pfeiff. Enum. p. 59.

MEXICO?—and BRAZIL.

See note under *Melocactus ferox*.

107. **Echinocactus spiralis,** Karw. in Pfeiff. Enum. p. 60.

Echinocactus stellaris et *robustus,* Karw., ex Pfeiff. loc. cit.

MEXICO (*Karwinski*).

108. **Echinocactus subuliferus,** Link et Otto in Verhandl. des Gartenb.-Vereins für Preuss. iii. p. 427, t. 27.

MEXICO.

109. **Echinocactus sulphureus,** Dietr. in Otto & Dietr. Allg. Gartz. xiii. p. 170.

SOUTH MEXICO, near Toliman (*Ehrenberg*).

110. **Echinocactus tenuispinus,** Link et Otto in Verhandl. des Gartenb.-Vereins für Preuss. p. 421.

Echinocactus ottonis, Lehm., var. *β,* Pfeiff. Enum. p. 48.

MEXICO?

111. **Echinocactus tetracentrus,** Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 31.

MEXICO.

112. **Echinocactus texensis,** Hopf. in Otto & Dietr. Allg. Gartz. 1847, p. 297.

Echinocactus lindheimeri, Engelm. Pl. Lindh. et Synops. Cact. U. S. &c. p. 20.

Echinocactus courantianus, Lem., ex Labour. Cact. p. 196.

TEXAS.—NORTH-EASTERN MEXICO, Saltillo (ex *Engelmann*). Hort. Kew.

113. **Echinocactus theloides,** Salm Dyck in Otto & Dietr. Allg. Gartz. xviii. p. 395.

MEXICO.

114. **Echinocactus thrincogonus,** Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 22.

MEXICO.

115. **Echinocactus tribolacanthus,** Monv. Cat. 1846, ex Labour. Cact. p. 221.

MEXICO?

116. **Echinocactus tricuspidatus,** Scheidw. ex Ehrb. in Linnæa, xix. p. 355.
Echinocactus melmsianus, Wegener, in Otto & Dietr. Allg. Gartz. xii. p. 65.
North Mexico, received from San Luis Potosi (*Ehrenberg*).

117. **Echinocactus tuberculatus,** Link & Otto, in Verhandl. des Gartenb.-Vereins für Preuss. iii. p. 425, t. 26; Pfeiff. Enum. p. 60.
Mexico.

118. **Echinocactus tubiflorus,** Hook. Bot. Mag. t. 3627.
Cereus tubiflorus, Pfeiff. Enum. p. 71.
Mexico ?

119. **Echinocactus turbiniformis,** Pfeiff. in Otto & Dietr. Allg. Gartz. 1838, p. 275; Pfeiff. & Otto, Abbild. ii. t. 3.
Mamillaria disciformis, DC.
Mamillaria turbinata, Bot. Mag. t. 3984.
South Mexico, near San Pedrito and in other places in the warmer Barrancas, on perpendicular cliffs (*Ehrenberg*). Hort. Kew.

120. **Echinocactus uncinatus,** Engelm., ex Scheer in Seem. Bot. Voy. 'Herald,' p. 290; Engelm. Cact. U.S. & Mex. Bound. Surv. p. 20.
Texas.—North Mexico, between Saltillo and San Luis Potosi (*Poselger*), near Chihuahua (*Potts*), near Parras (*Gregg*).

121. **Echinocactus uncinatus,** Galeotti, in Pfeiff. & Otto, Abbild. ii. t. 18.
Mexico (*Galeotti*).

122. **Echinocactus undulatus,** Dietr. in Otto & Dietr. Allg. Gartz. xii. p. 187.
Mexico.

123. **Echinocactus visnaga,** Hook. in Ill. Lond. News, 1846; Bot .Mag. t. 4559.
North Mexico, San Luis Potosi (*Staines*).

124. **Echinocactus vanderæyi,** Lem. Cact. aliq. Nov. p. 20; Walp. Rep. ii. p. 316.
Mexico.

124*. **Echinocactus vargasii,** Regel & Klein, Ind. Sem. Hort. Petrop. 1860, p. 48
Mexico (*Karwinski*).

125. **Echinocactus wegenerii,** Salm Dyck, Cact. ed. 2, p. 160.
Echinocactus quadrinatus, Weg., ex Salm Dyck, loc. cit.
Mexico (*Wegener*).

126. **Echinocactus williamsii,** Lem. in Otto & Dietr. Allg. Gartz. xiii. p. 385; Bot. Mag. t. 4296.
South Mexico, Real del Monte. Hort. Kew.

127. **Echinocactus wislizenii,** Engelm. Mem. p. 96, ex Salm Dyck, Cact. ed. 2, p. 151.
North Mexico, near Doñana (*Wislizenus*), neighbourhood of Chihuahua (*Potts*).

128. **Echinocactus,** sp. nov. ("*E. horizonthalonio* remote aff.," Scheer in Seem. Bot. Voy. 'Herald,' p. 290).

NORTH MEXICO, Chihuahua (*Potts*).

129. **Echinocactus,** sp. nov. ("*E. hystriacantho* aff.," Scheer in Seem. Bot. Voy. 'Herald,' p. 290).

NORTH MEXICO, Chihuahua (*Potts*).

130. **Echinocactus,** sp. ("*E. Scheeri* aff.," Scheer in Seem. Bot. Voy. 'Herald,' p. 290).

NORTH MEXICO, near Chihuahua (*Potts*).

6. CEREUS.

Cereus, Haw. Syn. Pl. Succ. p. 178; Benth. et Hook. Gen. Plant. i. p. 849.

About 200 species in the warm parts of America, a few occurring in the West Indies and Galapagos Islands.

1. **Cereus acutangulus,** Hort. Berol., ex Pfeiff. Enum. p. 107.

MEXICO. Hort. Kew.

2. **Cereus adustus,** Engelm. in Wisliz. Rep. et Synops. Cact. U. S. &c. p. 24; Salm Dyck, Cact. ed. 2, p. 191.

NORTH MEXICO, mountains west of Chihuahua near Cosiquiriachi (ex *Engelmann*).

3. **Cereus anisacanthus,** DC. Rev. Cact. p. 116.

NORTH MEXICO, without locality (*Coulter*), near Jicuilco, on the Rio Grande, as a tree (*Ehrenberg*). Hort. Kew.

4. **Cereus amœnus,** Dietr. in Otto & Dietr. Allg. Gartz. 1844, p. 187.

SOUTH MEXICO, San Mateo, 7000 feet (*Ehrenberg*).

5. **Cereus baxaniensis,** Karw. in Labour. Cact. p. 374; Pfeiff. Enum. p. 109.

SOUTH MEXICO, between Cordova and Vera Cruz (*Karwinski*). Hort. Kew.

6. **Cereus benekei,** Ehrb. in Bot. Zeit. ii. p. 835.

MEXICO.

7. **Cereus bifrons,** Haw. Suppl. p. 76.

MEXICO.

This is reduced by Pfeiffer (Enum. p. 122) and Salm Dyck (Cact. ed. 2, p. 53) to *C. coccinea,* Salm Dyck; on what ground does not appear.

8. **Cereus brachiatus,** Galeotti in Salm Dyck, Cact. ed. 2, p. 195, et Labour. Cact. p. 328.

SOUTH MEXICO, Tehuacan (*Galeotti*).

9. **Cereus cæspitosus,** Engelm. in Bost. Journ. Nat. Hist. v., et Cact. U.S. & Mex. Bound. Surv. p. 32, t. 33, 34.

From the Canadian river, near Delaware Mount, southward to—North Mexico, Monterey, Saltillo (*Gregg*).

α. **minor,** Engelm. Synops. Cact. U. S. &c. p. 24.

β. **major,** Engelm. loc. cit.

γ. **castaneus,** Engelm. loc. cit.

10. **Cereus callicoche,** Scheidw. in Bull. Acad. Brux. vi. p. 3; Walp. Rep. ii. p. 338.

South Mexico, near Moran (ex *Scheidweiler*).

11. **Cereus calvescens,** DC. Rev. Cact. p. 116.

Mexico (*Coulter*).

12. **Cereus (Pilocereus) chrysomallus,** Lem. in Labour. Cact. p. 276.

Mexico?

13. **Cereus cinerascens,** DC. Rev. Cact. p. 116.

Cereus deppei, Hort.

South Mexico, Zimapan and Ismiquilpan (*Ehrenberg*), mountains above Guadalupe (*Bourgeau,* 303). Hort. Kew.

β. **crassior,** DC. loc. cit.

Cereus aciniformis, Hort. Berol.

Mexico, without locality (*Coulter*), near Pachuca, at the foot of Cerro Ventoso &c. (*Ehrenberg*).

γ. **tenuior,** DC. loc. cit.

Mexico, without locality (*Coulter*).

14. **Cereus cirrhiferus,** Labour. Cact. p. 311.

Mexico.

14*. **Cereus claviformis,** Regel & Klein, Ind. Sem. Hort. Petrop. 1860, p. 46.

Mexico (*Karwinski*).

15. **Cereus coccineus,** Salm Dyck in Pfeiff. Enum. p. 122; Pfeiff. & Otto, Abbild. i. t. 15, nec DC. Prodr. iii. p. 469.

Cereus bifrons, Haw. Suppl. p. 76?

Mexico. Hort. Kew.

16. **Cereus conformis,** Hort. Berol. ex Salm Dyck, Cact. ed. 2, p. 203.

Mexico (*Ehrenberg*).

17. **Cereus columna-trajani,** Karw.; Pfeiff. Enum. p. 76.

Pilocereus columna, Salm Dyck, Cact. ed. 2, p. 184.

Mexico, near San Sebastian (*Karwinski*).

18. **Cereus conicus,** Hort. Berol., ex Pfeiff. Enum. p. 97.
MEXICO.

19. **Cereus ctenoides,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 31, t. 42.
NORTH MEXICO, Eagle Pass to Santa Rosa Coahuila (*Bigelow*).

20. **Cereus dichroacanthus,** Mart., ex Pfeiff. Enum. p. 76.
MEXICO.

21. **Cereus dubius,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 36, t. 50.
TEXAS; NEW MEXICO.—NORTH MEXICO, valley of the Rio Grande (*Wright*, *Bigelow*, *Parry*).

22. **Cereus dyckii,** Mart. in Otto & Dietr. Allg. Gartz. 1836, p. 258; Pfeiff. Enum. p 87.
SOUTH MEXICO, near Zimapan. Hort. Kew.

23. **Cereus ehrenbergii,** Pfeiff. in Otto & Dietr. Allg. Gartz. 1840, p. 282; Labour. Cact. p. 313.
MEXICO.

24. **Cereus enneacanthus,** Engelm. Synops. Cact. U. S. &c. p. 26, et Cact. U.S. & Mex. Bound. Surv. p. 34, t. 48. figg. 2–4, et t. 49.
NEW MEXICO—and far into MEXICO proper (ex *Engelmann*).

25. **Cereus emoryi,** Engelm. in Sill. Journ. et Cact. U.S. & Mex. Bound. Surv. p. 40, t. 60. figg. 1–4.
CALIFORNIA.—NORTH MEXICO, "not north of the boundary line" (*Le Conte*).

26. **Cereus engelmanni,** Parry in Sill. Journ. 1852; Engelm. Cact. U.S. & Mex. Bound. Surv. p. 36, t. 57.
CALIFORNIA.—NORTH MEXICO, common in the Gila valley (*Schott*). Hort. Kew.

27. **Cereus erectus,** Karw. in Pfeiff. Enum. p. 95.
SOUTH MEXICO, near Zimapan (*Karwinski*).

28. **Cereus euphorbioides,** Haw. Suppl. p. 75; Pfeiff. Enum. p. 92.
MEXICO &c. Hort. Kew.

29. **Cereus fendleri,** Engelm. Pl. Fendl. et Cact. U.S. & Mex. Bound. Surv. p. 33.
TEXAS; NEW MEXICO.—NORTH MEXICO, El Paso to the Gila river &c. (*Bigelow* &c.).

30. **Cereus flagelliformis,** Haw. Syn. Pl. p. 185; Bot. Mag. t. 17.
Cactus flagelliformis, Linn. DC. Pl. Gras. t. 127.
Aporocactus flagelliformis, Lem.
Widely dispersed in TROPICAL AMERICA, and extending to—MEXICO?
"Frequently seen as an ornamental plant. At Guachinango and San Bartolo, on

the Rio Grande, this or a very similar species grows on trees and cliffs." (*Ehrenberg*). Hort. Kew.

31. **Cereus flagriformis,** Zucc., ex Pfeiff. Enum. p. 111 ; Pfeiff. & Otto, Abbild. i. t. 12.

MEXICO, near San José del Oro (*Karwinski*).

32. **Cereus flavescens,** Otto in Pfeiff. Enum. p. 79 ; Salm Dyck, Cact. ed. 2, p. 43.

MEXICO ?

33. **Cereus gemmatus,** Zucc., ex Pfeiff. Enum. p. 96.

SOUTH MEXICO, near San José del Oro, on rocks in the cold regions of the valley of Mexico, between the capital and Pachuca (*Ehrenberg*). Hort. Kew.

34. **Cereus geometrizans,** Mart., ex Pfeiff. Enum. p. 90.

SOUTH MEXICO, temperate regions near Zimapan, Mestitlan, Ismiquilpan, &c. (*Ehrenberg*). Hort. Kew.

β. **pugioniferus,** Salm Dyck, Cact. ed. 2, p. 48.

Cereus pugioniferus, Lem. Cact. aliq. Nov. Hort. Monv. p. 30.

SOUTH MEXICO, Mestitlan, Ismiquilpan, Zimapan, &c. (ex *Ehrenberg*).

35. **Cereus giganteus,** Engelm. in Emory's Rep. 1848, et Cact. U.S. & Mex. Bound. Surv. p. 42, t. 61, 62, et tab. front.

NEW MEXICO.—NORTH MEXICO, in Sonora to lat. 30° (*Thurber*, *Schott*), and along the Gila valley (*Emory*, *Parry*), also south to lat. 28°, near Guaymas (ex *Englemann & Bigelow*). Hort. Kew.

36. **Cereus gladiator,** Dietr. in Otto & Dietr. Allg. Gartz. vi. p. 34 ; Walp. Rep. ii. p. 340.

Cereus pugioniferus, Lem. Cact. aliq. Nov. Hort. Monv. p. 30.

SOUTH MEXICO, Mestitlan, Ismiquilpan, Zimapan, and many other places (*Ehrenberg*). Salm Dyck (Cact. ed. 2, p. 48) makes *C. pugioniferus* a variety of *C. geometrizans.*

37. **Cereus greggii,** Engelm. in Wisliz. Rep. et Cact. U.S. & Mex. Bound. Surv. p. 40.

α. **cismontanus,** Engelm. loc. cit. t. 63, 64.

β. **transmontanus,** Engelm. loc. cit. t. 65.

TEXAS.—NORTH MEXICO, Sonora (*Schott*, *Thurber*), Chihuahua (*Gregg*). Hort. Kew.

38. **Cereus leeanus,** Hook. Bot. Mag. t. 4417.

MEXICO.

39. **Cereus leptophis,** DC. Rev. Cact. p. 117, et Mém. t. 12.

MEXICO, without locality (*Coulter*). Hort. Kew.

40. **Cereus longisetus,** Engelm. Cact. U.S. et Mex. Bound. Surv. p. 32, t. 45, et Synop. Cact. U. S. &c. p. 24.

NORTH MEXICO, Santa Rosa, Coahuila (*Bigelow*).

41. **Cereus macdonaldiæ,** Hook. Bot. Mag. t. 4707.
HONDURAS (*Mrs. Macdonald*). Hort. Kew.

42. **Cereus? micracanthus,** DC. Rev. Cact. p. 115.
MEXICO, without locality (*Coulter*).

43. **Cereus marginatus,** DC. Rev. Cact. p. 116
SOUTH MEXICO, without locality (*Coulter*), Mestitlan &c., frequently used for hedges (*Ehrenberg*). Hort. Kew.

44. **Cereus martianus,** Zucc. in Flora, ii. 1832, Beibl. p. 66; Pfeiff. Enum. p. 110; Bot. Mag. t. 3768.
SOUTH MEXICO, Zimapan, San José del Oro. Hort. Kew.

45. **Cereus napoleonis,** Hook. Bot. Mag. t. 3458.
Cereus triangularis, var. *β. major,* Pfeiff. Enum. p. 117.
Cereus undatus, Haw. Phil. Mag. 1830, p. 109.
MEXICO? Hort. Kew.

46. **Cereus nycticalus,** Link in Verhandl. des Gartenb.-Vereins für Preuss. x. p. 373, t. 4; Salm Dyck, Cact. ed. 2, p. 216.
Cereus pterandra, Link, ex Pfeiff. Enum. p. 113.
MEXICO. Hort. Kew.

47. **Cereus pectinatus,** Engelm. Synop. Cact. U. S. &c. p. 23.
Echinocactus pectinatus, Scheidw. in Bull. Acad. Brux. vi. p. 3.
Echinocactus pectiniferus, Lem. Cact. Gen. Nov. p. 25.
Echinopsis pectinata, Fennel in Otto & Dietr. Allg. Gartz. 1843, p. 282; Pfeiff. & Otto, Abbild. ii. t. 10.
NORTH MEXICO, Chihuahua, Sonora (*Schott*), received from San Luis Potosi (ex *Ehrenberg*).

Var. ? *β.* **armata,** Poselg. ex Engelm. loc. cit.
NORTH MEXICO, Monterey (ex *Engelmann*).

Var. ? *γ.* **rigidissima,** Engelm. loc. cit.
NORTH MEXICO (ex *Engelmann*).
Scheer, in Seemann's 'Botany of the Voyage of the "Herald,"' partially describes six forms near *C. pectinatus*, n. 280–285 inclusive.

48. **Cereus pentalophus,** DC. Rev. Cact. p. 117.
SOUTH MEXICO, Puente de Dios, and in the Barrancas of Mestitlan and Zimapan, on chalk cliffs (*Ehrenberg*). Hort. Kew.
Pfeiffer (Enum. p. 101) includes *C. propinquus* and *C. leptacanthus* under this.

49. **Cereus procumbens,** Engelm. in Bost. Journ. Nat. Hist. vi p. 203.
TEXAS.—NORTH MEXICO, below Matamoras (ex *Engelmann*).

50. **Cereus polyacanthus,** Engelm. in Bot. Wisliz. Exp. p. 20, sub *Echinocereo.*
Texas.—North Mexico, common about El Paso and thence to the mountains of Chihuahua (*Bigelow*, *Wislizenus*, &c.).

51. **Cereus polylophus,** DC. Rev. Cact. p. 115.
Pilocereus polylophus, Salm Dyck, Cact. ed. 2, p. 184.
South Mexico, without locality (*Coulter*), Mestitlan, Zimapan, Las Ajuntas, and on the Zopata at Tlacolula (*Ehrenberg*).

52. **Cereus pottsii,** Salm Dyck, Cact. ed. 2, p. 208.
North Mexico, Chihuahua (*Potts*).

53. **Cereus pterogonus,** Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 59.
Mexico. Hort. Kew.

54. **Cereus pulchellus,** Pfeiff. Enum. p. 74.
Echinocactus pulchellus, Mart. in Nov. Act. Nat. Cur. xvi. pt. 1, p. 342, t. 23. fig. 2.
South Mexico, plains of Pachuca, 7500 feet (*Ehrenberg*, *Karwinski*).

55. **Cereus quadrangulispinus,** Lem., ex Ehrenb. in Linnæa, xix. p. 363.
South Mexico, Mestitlan, Ismiquilpan, Zimapan, &c. (*Ehrenberg*).

56. **Cereus ramosus,** Karw. in Pfeiff. Enum. p. 108.
Mexico.

57. **Cereus reductus,** DC. Prodr. iii. p. 463; Bot. Mag. t. 4443.
Cactus nobilis, Haw. Synops. p. 174.
Gymnocalycium reductum, Pfeiff. in Pfeiff. & Otto Abbild. ii. t. 12.
Mexico; Guatemala.

58. **Cereus rigidispinus,** Mühlpf. in Otto & Dietr. Allg. Gartz. xvi. p. 12; Walp. Ann. ii. p. 684.
Mexico?

59. **Cereus rigidispinus,** Lem. Hort. Univ. 1840, p. 223, t. 1.
Mexico.

60. **Cereus rostratus,** Lem. Cact. Aliq. Nov. p. 40.
Cereus hæmatus, Scheidw.? Walp. Rep. ii. p. 339.
Mexico. Hort. Kew.

61. **Cereus rufispinus,** Engelm. Mem. Tour in N. Mex. p. 104, ex Salm Dyck, Cact. ed. 2, p. 193.
North Mexico, mountains west of Chihuahua (ex *Engelmann*).

62. **Cereus (Echinocereus) salm-dyckianus,** Scheer in Seem. Bot. Voy. 'Herald,' p. 291.
North Mexico, near Chihuahua (*Potts*). Hort. Kew.

63. **Cereus scheerii,** Salm Dyck, Cact. ed. 2, p. 190.

North Mexico, Chihuahua (*Potts*).

64. **Cereus schottii,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 44, t. 74. fig. 16.

North Mexico, Sonora, towards Santa Magdalena (*Schott*).

65. **Cereus schrankii,** Zucc. in Pfeiff. Enum. p. 122; Pfeiff. & Otto, Abbild. i. t. 27.

Cereus formosus, Monv. Cat. 1834.

South Mexico, Zimapan, Sultepec (*Karwinski*).

66. **Cereus senilis,** Salm Dyck in DC. Prodr. iii. p. 464.

Pilocereus senilis, Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 6; Salm Dyck, Cact. ed. 2, p. 186.
Cactus senilis, Haw. in Phil. Mag. lxiii. p. 41.
Cactus bradypus, Lehm. Ind. Sem. Hort. Hamb. 1826, p. 17; Act. Nov. Nat. Cur. xvi. pt. 1, t. 12.

South Mexico, in the Barranca of Regla near San Sebastian, and in the great Barranca of the Rio Grande near Mestitlan (*Ehrenberg*); Guatemala. Hort. Kew.

67. **Cereus serpentinus,** Lagasc. in Ann. Sc. Nat. 1801, p. 261; Bot. Mag. t. 3566.

South Mexico, used for forming hedges about Regla (*Ehrenberg*). Hort. Kew.

67*. **Cereus (Echinocereus) similis,** Regel & Klein, Ind. Sem. Hort. Petrop. 1860, p. 29.

Mexico (*Karwinski*).

68. **Cereus spachianus,** Lem. Hort. Univ. i. p. 225.

Mexico. Hort. Kew.

69. **Cereus speciosissimus,** Desf. in Mém. Mus. iii. p. 190, t. 9; Bot. Reg. t. 486.

Cereus speciosissimus β. lateritius, Bot. Reg. t. 1596.

Mexico; Guatemala. Hort. Kew.

70. **Cereus spinulosus,** DC. Rev. Cact. p. 117.

Mexico (*Coulter*).

71. **Cereus stellatus,** Pfeiff. in Otto & Dietr. Allg. Gartz. 1836, p. 258.

Mexico.

72. **Cereus stramineus,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 35, t. 46, 47, et 48. fig. 1.

Texas; New Mexico.—North Mexico, El Paso to the Gila river (*Bigelow* &c). Hort. Kew.

73. **Cereus (Echinocereus) subinermis,** Salm Dyck, ex Scheer in Seem. Bot. Voy. 'Herald,' p. 291.

North Mexico, Chihuahua (*Potts*).

74. **Cereus superbus,** Ehrb. in Bot. Zeit. iv. p. 324.

Mexico.

75. **Cereus thurberi,** Engelm. in Sillim. Journ. 1854, et Cact. U.S. & Mex. Bound. Surv. p. 44, t. 74. fig. 15.

North Mexico, Sonora, west of the Sierra Madre (*Thurber*), more common southward (*Schott*).

76. **Cereus triangularis,** Haw. Synop. p. 180; Bot. Reg. t. 1807; Bot. Mag. t. 1834.

West Indies.—South Mexico, region of Orizaba (*Bourgeau*, 2488). Hort. Kew.

77. **Cereus tuberosus,** Poselger in Engelm. Synop. p. 30.

North Mexico.

78. **Cereus variabilis,** Pfeiff. Enum. p. 105; Pfeiff. & Otto, Abbild. ii. t. 15.

Cereus pitajaya, DC. Prodr. iii. p. 466; Bot. Mag. t. 4084.
Cereus undulosus, DC. Rev. Cact. p. 46.

Texas.—North Mexico, on the Lower Rio Grande (*Engelmann*); Panama, common on the sea-shore (*Seemann*). Hort. Kew.

79. **Cereus virens,** DC. Rev. Cact. p. 116.

Cereus tilophorus, Pfeiff., ex Labour. Cact. p. 359.
Cereus exerens, Link, ex Pfeiff. Enum. p. 99.

Mexico; Brazil.

Scheer, in Seemann's 'Botany of the Voyage of the "Herald,"' p. 292, describes six unnamed forms under *Echinocereus*, collected by Potts in Chihuahua, North Mexico, nos. 273–278 inclusive.

7. PHYLLOCACTUS.

Phyllocactus, Link, Handb. iii. p. 11; Benth. et Hook. Gen. Plant. i. p. 849.

About fifteen species, dispersed from Mexico to Brazil.

1. **Phyllocactus ackermanni,** Salm Dyck, Cact. ed. 2, p. 55.

Epiphyllum ackermanni, Haw. in Phil. Mag. 1829; Bot. Reg. t. 1331.
Cereus ackermanni, Pfeiff. Enum. p. 123; Bot. Mag. t. 3598.

Mexico, "only seen in cultivation" (*Ehrenberg*), ? Izhuatlancillo (*Bourgeau*, 2523). Hort. Kew.

2. **Phyllocactus anguliger,** Lem. Jard. Fl. 1851; Bot. Mag. t. 5100; Lindley & Paxton, Fl. Gard. t. 34.

South Mexico, near Matanejo. Hort. Kew.

3. **Phyllocactus biformis,** Lab. Monogr. Cact. p. 418; Bot. Mag. t. 6156.

Disocactus biformis, Lindl. Bot. Reg. 1845, t. 9.
Disisocactus biformis, Salm Dyck, Cact. ed. 2, p. 57.

Honduras (*Skinner*).

4. **Phyllocactus crenatus,** Walp. Rep. v. p. 820; Salm Dyck, Cact. ed. 2, p. 224.
Cereus crenatus, Lindl. Bot. Reg. 1844, t. 31.
HONDURAS (*Skinner*). Hort. Kew.

5. **Phyllocactus grandis,** Lem. Flore des Serres, iii. p. 255 *a*; Salm Dyck, Cact. ed. 2, p. 224; Labour. Cact. p. 415.
MEXICO, region of Orizaba (*Bourgeau*, 2487); HONDURAS (ex *Labouret*). Hort. Kew.

6. **Phyllocactus latifrons,** Salm Dyck, Cact. ed. 2, p. 55.
Cereus latifrons, Zucc. in Act. Acad. Bav. ii. p. 735; Pfeiff. & Otto, Abbild. i. t. 10. fig. 2; Bot. Mag. t. 3813.
Cereus oxypetalus, DC. Rev. Cact. t. 14?
MEXICO, between Cordova and Vera Cruz (*Karwinski*); GUATEMALA. Hort. Kew.

7. **Phyllocactus phyllanthus,** Salm Dyck, Cact. ed. 2, p. 56.
Cereus phyllanthus, DC. Prodr. iii. p. 469; Otto & Pfeiff. Abbild. i. t. 10. fig. 1.
Cactus phyllanthus, Linn. Sp. Pl. p. 670; DC. Pl. Grass. t. 145, nec Hook. Bot. Mag. t. 2692.
PANAMA, in forests on the trunks of trees (*Seemann*).—This appears to be widely dispersed in the WEST INDIES and Eastern SOUTH AMERICA.

8. **Phyllocactus phyllanthoides,** Salm Dyck, Cact. ed. 2, p. 55.
Cactus phyllanthoides, DC. Hort. Monsp. p. 84; Bot. Mag. t. 2092.
Cereus phyllanthoides, DC. Prodr. iii. p. 469.
Cactus speciosus, Desf. Tabl. 191; Bonpl. Pl. Hort. Malm. et Nav. p. 8, t. 3; Bot. Reg. t. 304.
SOUTH MEXICO, near Tlacolula &c., growing on the trunks of trees amongst orchids. Hort. Kew.

9. **Phyllocactus serratus,** Brongn., ex Labour. Cact. p. 417.
MEXICO.

Tribe OPUNTIEÆ.

8. RHIPSALIS.

Rhipsalis, Gærtn. Fruct. i. p. 137, t. 28. fig. 1; Benth. et Hook. Gen. Plant. i. p. 850.

About thirty species, spread over Tropical America, and one (or two) extending to tropical Africa and Asia.

1. **Rhipsalis cassytha,** Gærtn. Fruct. i. p. 137, t. 28. fig. 1; Pfeiff. Enum. 133.
Cereus baccifera, Bot. Mag. t. 3080.
SOUTH MEXICO, valley of Cordova, growing on *Inga vera* (*Bourgeau*, 1873), Vera Cruz to Orizaba (*Müller*, 1470), Zacualtipan (*Berlandier*, 449).—Widely dispersed in the WEST INDIES and SOUTH AMERICA; also in TROPICAL AFRICA and ASIA. Hort. Kew.

Var. **moçiniana,** DC. Rev. Cact. t. 21.
MEXICO (*Moçino & Sessé*).

2. **Rhipsalis coriacea,** Polakowsky in Linnæa, xli. p. 562.

COSTA RICA, on trees near Cartago (*Polakowsky*).

3. **Rhipsalis saglionis,** Lem. Cact. aliq. Nov. p. 39.

Rhipsalis brachiata, Bot. Mag. t. 4039.

MEXICO?; BRAZIL, according to Haworth. Hort. Kew.

4. **Rhipsalis,** sp.

NICARAGUA, Chontales (*Seemann*, 48). Hb. Kew.

9. NOPALEA.

Nopalea, Salm Dyck, Cact. ed. 2, p. 63; Benth. et Hook. Gen. Plant. i. p. 850.

Three species, inhabiting the West Indies, South America, and Mexico. One species is now widely dispersed in the Old World.

1. **Nopalea coccinellifera,** Salm Dyck, Cact. ed. 2, p. 64.

Cactus cochinellifer, Linn. Sp. Pl. p. 670; Andrews's Rep. t. 533; Bot. Mag. t. 2741, 2742.

Opuntia coccinellifera, Mill., ex Pfeiff. Enum. p. 150; Pfeiff. & Otto, Abbild. i. t. 24.

MEXICO; CENTRAL AMERICA.—JAMAICA. Hort. Kew.

10. OPUNTIA.

Opuntia, Mill. Dict. ed. 6; Benth. et Hook. Gen. Plant. i. p. 851.

This genus has nearly the whole range of the order. About 150 species have been described. One or more species are now naturalized in some parts of the Old World.

1. **Opuntia albicans,** Salm Dyck, Hort. Dyck. p. 361.

Opuntia prate, Sabin, ex Pfeiff. Enum. p. 155.

MEXICO. Hort. Kew.

2. **Opuntia amyclæa,** Tenore, Fl. Neap. App. 5, Sylloge, p. 240; Salm Dyck, Cact. ed. 2, p. 240, et in Pfeiff. Enum. p. 159.

MEXICO (*Karwinski*). Hort. Kew.

2*. **Opuntia angusta,** Meinsh. in Koch's Wochenschrift, i. p. 30.

MEXICO (*Karwinski*).

3. **Opuntia arborescens,** Engelm. in Bot. Wisliz. Rep. et Cact. U.S. & Mex. Bound. Surv. p. 58, t. 75. figg. 16, 17.

Opuntia exuviata stellata, Lem., ex Labour. Cact. p. 492.

Opuntia stellata, Salm Dyck, Cact. ed. 2, p. 73.

PLATTE and ARKANSAS rivers southward.—NORTH MEXICO, Chihuahua.

4. **Opuntia arbuscula,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 60.

NORTH MEXICO, on the Gila (*Schott*).

5. **Opuntia arenaria,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 52, t. 75. fig. 15.

NORTH MEXICO, valley of the Rio Grande (*Wright*).

6. **Opuntia basilaris,** Engelm. et Bigel. Pacif. Railr. Rep., Cact. p. 43, t. 13. figg. 1–5, et Cact. U.S. & Mex. Bound. Surv. p. 52.

California.—North Mexico, valley of the Gila (*Schott*). Hort. Kew.

7. **Opuntia bulbispina,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 55, t. 73. figg. 5, 6.

North Mexico, near Perros Bravos, north of Saltillo (*Gregg*).

8. **Opuntia candelabriformis,** Hort. Monac., ex Pfeiff. Enum. p. 159.

Mexico. Hort. Kew.

9. **Opuntia clavarioides,** Otto in Pfeiff. Enum. p. 173.

Mexico.

10. **Opuntia crassa,** Haw. Suppl. p. 81; Pfeiff. Enum. p. 153.

Opuntia parvula, Salm Dyck, Cact. ed. 2, pp. 69, 243.

Mexico. Hort. Kew.

11. **Opuntia decipiens,** DC. Rev. Cact. p. 118.

Mexico (*Coulter*).

12. **Opuntia decumbens,** Salm Dyck, Hort. Dyck. p. 361; Bot. Mag. t. 3914.

Opuntia repens, Karw., et *O. irrorata,* Mart., sec. Pfeiff. Enum. p. 154.

Mexico.

13. **Opuntia echinocarpa,** Engelm. et Bigel. in Pacif. Railr. Rep. et Cact. U.S. & Mex. Bound. Surv. p. 56.

β. **major,** Engelm. loc. cit.

Colorado.—North Mexico, Sonora (*Schott*). Hort. Kew.

14. **Opuntia emoryi,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 53, tt. 70, 71, et Synop. Cact. U. S. &c. p. 47.

Texas; Colorado.—North Mexico, between the sand hills and Lake Santa Maria (*Wright, Bigelow*), Sonora (*Wright*).

15. **Opuntia engelmannii,** Salm Dyck, Cact. ed. 2, p. 235; Scheer in Seem. Bot. Voy. 'Herald,' p. 293; Engelm. Cact. U.S. & Mex. Bound. Surv. p. 47, t. 75. figg. 1–4.

Texas.—North Mexico, Chihuahua (*Wislizenus, Potts*). Hort. Kew.

16. **Opuntia exuviata,** DC. Rev. Cact. p. 118.

Mexico, without locality (*Coulter*).

β. **angustior,** DC. loc. cit.

Mexico (*Coulter*).

γ. **spinosior,** DC. loc. cit.

Mexico (*Coulter*).

17. **Opuntia ferox,** Haw. Suppl. p. 82; Pfeiff. Enum. p. 167.

Mexico? Hort. Kew.

18. **Opuntia ficus-indica,** Mill. Dict. ed. 6; Pfeiff. Enum. p. 152; Salm Dyck, Cact. ed. 2, p. 235.

Opuntia vulgaris, Tenore, Syll. Fl. Neap. p. 239, ex Pfeiff. loc. cit.

Mexico, cultivated south of the Rio Grande (*Engelmann*). Hort. Kew.

19. **Opuntia filipendula,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 51, t. 68.

Texas.—North Mexico, along the Rio Grande (*Wright*).

20. **Opuntia frutescens,** Engelm. Pl. Lindh. 1845; Synop. Cact. U. S. &c. p. 53.

α. **longispina,** Engelm. loc. cit.

β. **brevispina,** Engelm. loc. cit.

Texas; California.—North Mexico, Matamoras and Saltillo westward to Sonora (ex *Engelmann*), Chihuahua (*Potts*), Monterey (*Plotz*). Hort. Kew.

21. **Opuntia fulgida,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 57, t. 75. fig. 18.

North Mexico, throughout all the sierras in Western Sonora (ex *Engelmann*).

22. **Opuntia glaucescens,** Hort. Berol., ex Pfeiff. Enum. p. 155.

Mexico.

23. **Opuntia glaucophylla,** Wendl. Cat. Hort. Herrenh. 1835; Pfeiff. Enum. p. 162.

Mexico. Hort. Kew.

24. **Opuntia grandis,** Hort. Angl., ex Pfeiff. Enum. p. 155.

Mexico. Hort. Kew.

25. **Opuntia gracilis,** Hort. Monac., ex Pfeiff. Enum. p. 172.

Mexico.

26. **Opuntia grahami,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 55, t. 72.

North Mexico, along the Rio Grande (*Wright, Bigelow*).

27. **Opuntia hernandezii,** DC. Rev. Cact. p. 69, t. 16, et Prodr. iii. p. 474.

Nopal sylvestre, Thierry-Menonv. Voy. Guax. ii. p. 277, cum icone.

South Mexico, temperate regions in the State of Oaxaca.

28. **Opuntia imbricata,** DC. Prodr. iii. p. 471.

Cereus imbricatus, Haw. Synop. p. 183.
Opuntia cristata, Salm Dyck, Cact. ed. 2, p. 73.
Opuntia exuviata, Salm Dyck, loc. cit.

North Mexico, near Chihuahua (*Potts*); South Mexico, Zacualco (*Bourgeau,* 264). Hort. Kew.

29. **Opuntia karwinskiana,** Salm Dyck, Cact. ed. 2, p. 239.
MEXICO (*Karwinski*). Hort. Kew.

30. **Opuntia kleiniæ,** DC. Rev. Cact. p. 118.
SOUTH MEXICO, without locality (*Coulter*), common at Ismiquilpan and Zimapan, and at Las Ajuntas, on the Montezuma river (*Ehrenberg*). Hort. Kew.

31. **Opuntia leptocaulis,** DC. Rev. Cact. p. 118; Pfeiff. Enum. p. 173; Salm Dyck, Cact. ed. 2, p. 250.
NORTH MEXICO, Chihuahua (*Potts*); SOUTH MEXICO, without locality (*Coulter*), common about Ismiquilpan, Zimapan, Las Ajuntas, &c. (*Ehrenberg*). Hort. Kew.

32. **Opuntia leucacantha,** Hort. Berol., ex Pfeiff. Enum. p. 167.
MEXICO.

33. **Opuntia leucosticta,** Wendl. Cat. Hort. Herrenh. 1835; Pfeiff. Enum. p. 167.
MEXICO.

34. **Opuntia leucotricha,** DC. Rev. Cact. p. 119; Pfeiff. Enum. p. 156.
MEXICO, without locality (*Coulter*). Hort. Kew.

35. **Opuntia macrocentra,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 49, t. 75. fig. 8.
TEXAS.—NORTH MEXICO, along the Rio Grande (*Wright*).

36. **Opuntia mamillata,** Schott in Engelm. Cact. U.S. & Mex. Bound. Surv. p. 58, t. 75. fig. 19.
NORTH MEXICO, Sonora, on the Sierra Babuquibari (*Schott*).

37. **Opuntia megacantha,** Salm Dyck, Hort. Dyck. p. 363; Pfeiff. Enum. p. 160.
MEXICO.

38. **Opuntia microdasys,** Lehm. Ind. Sem. Hort. Hamb. 1827; Nov. Act. Nat. Cur. xvi. pars 1, p. 317; Pfeiff. Enum. p. 154; Salm Dyck, Cact. ed. 2, p. 241.
SOUTH MEXICO, Ismiquilpan, Zimapan, and Las Ajuntas (*Ehrenberg*). Hort. Kew.

β. **minor,** Salm Dyck, Hort. Dyck. p. 186.
Opuntia pulvinata, DC. Rev. Cact. p. 119.
SOUTH MEXICO, without locality (*Coulter*).

39. **Opuntia oblongata,** Wendl. Cat. Hort. Herrenh. 1835; Pfeiff. Enum. p. 161.
MEXICO.

40. **Opuntia phæacantha,** Engelm. Pl. Fendl. et Cact. U.S. & Mex. Bound. Surv. p. 49, t. 75. figg. 9–13.

a. **nigricans,** Engelm. loc. cit. p. 50.

Bryophyllum.
Cotyledon acutifolia (Guat.)
20. Sedum guatemalense (p. 65).
125. Echeveria australis Rose maxonii (Addenda).
Altamiranoa pittieri (Addenda). guatemalensis "
Kimsleyana (p. 49).
29. Sedum australe Rose (p. 67). Sed. milleanghi (Addenda).
Villadia guatemalensis (Addenda). tritelii "

Hyfrang.
Carpodia peruviana
Philadelphus myrtoides.

Cunon.
Weinmannia pinnata

Altingia
Liquidambar.

Connarac.
Rourea glabra.
" guerrensis.
Connarus lamberti. Conn. williamsii (Addend.)
panamensis
turczin.
Cnestidium rufescens.

Escallonia pearcana (Addenda).

β. **brunnea,** Engelm. loc. cit. p. 50.
TEXAS.—NORTH MEXICO, along the valley of the Rio Grande (*Wright*).

41. **Opuntia pottsii,** Salm Dyck, Cact. ed. 2, p. 236.
NORTH MEXICO, Chihuahua (*Potts*).

42. **Opuntia pseudo-tuna,** Salm Dyck, Obs. Bot. p. 7; Pfeiff. Enum. p. 162.
MEXICO?

43. **Opuntia pubescens,** Wendl. Cat. Hort. Herrenh. 1835; Pfeiff. Enum. p. 149.
MEXICO.

44. **Opuntia puberula,** Hort. Vindob., ex Pfeiff. Enum. p. 156.
MEXICO.

45. **Opuntia ramulifera,** Salm Dyck, Hort. Dyck. p. 330; Pfeiff. Enum. p. 173.
MEXICO.

46. **Opuntia robusta,** Wendl. Cat. Hort. Herrenh. 1835; Pfeiff. Enum. p. 165.
Opuntia flavicans, Lem., ex Labour. Cact. p. 463.
MEXICO. Hort. Kew.

47. **Opuntia rosea,** DC. Rev. Cact. p. 66, t. 15; Pfeiff. Enum. p. 171.
MEXICO (*Moçino & Sessé*).

48. **Opuntia rufida,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 51.
NORTH MEXICO, common about Presidio del Norte (*Bigelow*), and in the lower valley of the Nazas, South-eastern Chihuahua (*Gregg*).

49. **Opuntia schottii,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 54, t. 73. figg. 1–4.
TEXAS.—NORTH MEXICO, near San Luis Potosi (*Gregg*).

50. **Opuntia setispina,** Engelm. in Salm Dyck's Cact. ed. 2, p. 239.
NORTH MEXICO, pine-woods in the mountains of Chihuahua (*Wislizenus*).

51. **Opuntia spinulifera,** Salm Dyck, Hort. Dyck. p. 364; Pfeiff. Enum. p. 157.
Opuntia oligacantha, Hort. Vindob., ex Pfeiff. loc. cit.
MEXICO.

52. **Opuntia stapeliæ,** DC. Rev. Cact. p. 117.
MEXICO, without locality (*Coulter*).

53. **Opuntia stenopetala,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 46, t. 66.
NORTH MEXICO, on the battle-field of Buena Vista, south of Saltillo (*Gregg*).

54. **Opuntia streptacantha,** Lem. Cact. Gen. et Sp. Nov. Hort. Monv. p. 62.
MEXICO? Hort. Kew.

55. **Opuntia tenuispina,** Engelm. Cact. U. S. & Mex. Bound. Surv. p. 50, t. 75. fig. 14.

North Mexico, along the Rio Grande (*Wright*).

56. **Opuntia tessellata,** Engelm. in Pacif. Railr. Rep., Cact. p. 52, t. 21. figg. 1–7, et Cact. U.S. & Mex. Bound. Surv. p. 60.

Opuntia ramosissima, Engelm. in Sill. Journ. 1852.

California.—North Mexico, Sierra Madre, south of the Gila (*Schott*).

57. **Opuntia thurberi,** Engelm. Cact. U.S. & Mex. Bound. Surv. p. 59.

North Mexico, near Bacuachi, Sonora (*Thurber*).

58. **Opuntia tomentosa,** Salm Dyck, Obs. Bot. p. 8; Pfeiff. Enum. p. 160.

Cactus tomentosus, Link, Enum. ii. p. 24.

Mexico. Hort. Kew.

59. **Opuntia tuna,** Mill. Dict. ed. 8; Pfeiff. Enum. p. 161.

Opuntia coccinellifera, DC. Pl. Grass. t. 137.

Cactus bonplandii, H. B. K. Nov. Gen. et Sp. vi. p. 69.

Mexico.—Colombia; Peru.

60. **Opuntia tunicata,** Lehm. in. Act. Nov. Nat. Cur. xvi. pt. 1, p. 319; Pfeiff. Enum. p. 170.

Opuntia furiosa, Wendl. Cat. Hort. Herrenh. 1835.

North Mexico, Chihuahua (*Potts*), Sierra Babuquibari, Sonora; South Mexico, Peñon de los Baños, valley of Mexico (*Bourgeau*, 304). Hort. Kew.

Ehrenberg distinguishes two species, and states that they cover large expanses of the uplands of Mexico.

61. **Opuntia vulgaris,** Mill. Dict. ed. 8; Pfeiff. Enum. p. 149.

Cactus opuntia, Linn. Sp. Pl. p. 669; Bot. Mag. t. 2393.

Mexico. Hort. Kew.

62. **Opuntia wrightii,** Engelm. Cact. U.S. et Mex. Bound. Surv. p. 59.

Texas.—North Mexico, southward in Mexico (*Gregg*), mountains of Sonora (*Wright*).

63. **Opuntia whipplei,** Engelm. et Bigel. in Pacif. Railr. Rep. Cact. p. 50, t. 17. figg. 1–6, t. 18. fig. 4; et Engelm. Cact. U.S. & Mex. Bound. Surv. p. 57.

Var. **spinosior,** Engelm. loc. cit.

North Mexico, from the Gila south to the Santa Cruz river and Tucson and further east (*Schott*).

64. **Opuntia vaginata,** Engelm. & Bigel. Pacif. Railr. Rep. Cact. p. 52, t. 20. fig. 1, t. 24. figg. 13–15.

New Mexico.—North Mexico, about San Luis Potosi (*Gregg*).

11. PERESKIA.

Pereskia, Mill. Dict. ed. 6; Benth. et Hook. Gen. Plant. i. p. 851.

About a dozen species in Tropical America and the West Indies.

1. **Pereskia bleo,** DC. Prodr. iii. p. 475; Bot. Reg. t. 1473; Bot. Mag. t. 3478; Pfeiff. & Otto, Abbild. i. t. 30.
Cactus bleo, H. B. K. Nov. Gen. et Sp. vi. p. 69.
MEXICO (ex *Pfeiffer & Otto*); PANAMA, shady woods, Hacienda de Juan Lanas Cupica and Puerto Piñas (*Seemann*).—COLOMBIA. Hort. Kew.

2. **Pereskia calandriniæfolia,** Hort. Berol., ex Först. Handb. Cact. p. 511; Salm Dyck, Cact. ed. 2, p. 252.
Pereskia pititache, Karw., ex Labour. Cact. p. 503.
MEXICO.

3. **Pereskia lychnidiflora,** DC. Rev. Cact. p. 75, t. 18; Pfeiff. Enum. p. 177.
MEXICO (*Moçino & Sessé*).

4. **Pereskia opuntiæflora,** DC. Rev. Cact. p. 76, t. 19; Pfeiff. Enum. p. 178.
MEXICO (*Moçino & Sessé*).

5. **Pereskia pititache,** Karw., ex Pfeiff. Enum. p. 176.
MEXICO.

6. **Pereskia rotundifolia,** DC. Rev. Cact. p. 77, t. 20; Pfeiff. Enum. p. 178.
MEXICO (*Moçino & Sessé*).

7. **Pereskia spathulata,** Hort. Berol., ex Pfeiff. Enum. p. 176.
MEXICO. Hort. Kew.

8. **Pereskia zinniæflora,** DC. Rev. Cact. p. 75, t. 17; Pfeiff. Enum. p 177.
MEXICO (*Moçino & Sessé*).

Order LXVI. FICOIDEÆ.

Ficoideæ, Benth. et Hook. Gen. Plant. i. p. 851.

Annual or perennial herbs or undershrubs. About 450 species, belonging to twenty-two genera. They are generally dispersed in tropical and subtropical regions; and a very few grow in cold countries. Upwards of 350 species are restricted to South Africa, 300 of them belonging to the genus *Mesembryanthemum.*

Tribe AIZOIDEÆ.

1. SESUVIUM.

Sesuvium, Linn. Gen. Plant. n. 624; Benth. et Hook. Gen. Plant. i. p. 855.

About four herbaceous or slightly woody species, widely diffused on tropical sea-shores.

1. **Sesuvium portulacastrum,** Linn. Sp. Pl. p. 446; Jacq. Amer. t. 95.

North Mexico, South Mexico, Nicaragua.—Common on the sea-shores within the Tropics. Hb. Kew.

2. TRIANTHEMA.

Trianthema, Linn. Gen. Plant. n. 537; Benth. et Hook. Gen. Plant. i. p. 855.

About twelve herbaceous and half-shrubby species, widely spread in warm countries.

1. **Trianthema monogyna,** Linn. Mant. p. 69; DC. Pl. Grass. t. 109.

North Mexico.—Widely dispersed in the Tropics. Hb. Kew.

Tribe MOLLUGINEÆ.

3. MOLLUGO.

Mollugo, Linn. Gen. Plant. n. 106; Benth. et Hook. Gen. Plant. i. p. 857.

About twelve slender herbaceous species, generally diffused in warm countries.

1. **Mollugo arenaria,** H. B. K. Nov. Gen. et Sp. vi. p. 21.

South Mexico, Tepic (*Lay*).—North parts of South America. Hb. Kew.

2. **Mollugo glinus,** A. Rich. Fl. Abyss. i. p. 48.

Glinus lotoides, Lœfl.; Gærtn. Fruct. t. 130.

Mollugo glinoides, Camb.; St.-Hil. Fl. Bras. t. 109.

North Mexico, Sonora Alta (*Coulter*, 1366); South Mexico, near Tantoyuca (*Ervendberg*).—Widely dispersed in tropical and subtropical regions, both in America and in the Old World. Hb. Kew.

3. **Mollugo schrankii,** Ser. in DC. Prodr. i. p. 391.

Mollugo dichotoma, Schrank, Pl. Rar. Hort. Monac. t. 64.

South Mexico, Acapulco (*Hœnke*).

4. **Mollugo verticillata,** Linn. Sp. Pl. p. 131; A. Gr. Gen. Am. Bor.-or. t. 101.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 283); South Mexico, Acapulco (*Beechey*); San Salvador (*Bernoulli*, 5); Panama, Chagres (*Fendler*, 11).—In nearly all tropical and subtropical regions of America. Hb. Kew.

Both *M. arenaria* and *M. schrankii* should perhaps be referred to this species.

Order LXVII. UMBELLIFERÆ.

Umbelliferæ, Benth. et Hook. Gen. Plant. i. p. 859.

About 1300 species, mostly herbaceous plants, belonging to about 160 genera. The order is generally dispersed in temperate and subtropical regions, a few species extending to frigid regions. In tropical countries it is almost restricted to the mountains.

Tribe HYDROCOTYLEÆ.

There are only seven genera of this tribe, which, with the exception of *Hydrocotyle* itself, are restricted to Australia and some of the neighbouring islands and South America.

1. HYDROCOTYLE.

Hydrocotyle, Linn. Gen. Plant. n. 325; Benth. et Hook. Gen. Plant. i. p. 872.

About seventy herbaceous species, mostly inhabiting marshes and bogs, and dispersed over nearly the whole area of the family.

1. **Hydrocotyle bonplandii,** Rich. Hydroc. p. 27, fig. 7.

GUATEMALA, on the banks of rivers (*Bernoulli*, 311); COSTA RICA, in woods, Angostura (*Polakowsky*).—Southward to CHILI. Hb. Kew.

2. **Hydrocotyle bonariensis,** Lam. Dict. iii. p. 147; DC. Prodr. iv. p. 60.

SOUTH MEXICO, Vera Cruz (*Linden*, 565; *Galeotti*, 2742); Hacienda de la Laguna (*Schiede & Deppe*); PANAMA, Chagres (*Fendler*, 132).—Southward to CHILI and URUGUAY. Hb. Kew.

3. **Hydrocotyle interrupta,** Mühl. Cat. p. 10; DC. Prodr. iv. p. 59.

Hydrocotyle racemosa, DC. Prodr. iv. p. 70; Calques des Dess. Fl. Mex. 425.

Eastern States of N. AMERICA from Massachusetts southward to Texas, California, and—NORTH MEXICO, San Luis Potosi to Tampico (*Palmer*, 1068), Sonora Alta (*Coulter*, 107).—Also in the SANDWICH ISLANDS. Hb. Kew.

4. **Hydrocotyle mexicana,** Ch. et Schl. in Linnæa, v. p. 208.

SOUTH MEXICO, near Jalapa, 3500 feet (*Galeotti*, 2740, 2747; *Linden*, 557; *Schiede & Deppe*), in shady woods, valley of Cordova (*Bourgeau*, 2051); GUATEMALA, Volcan de Fuego, at 6400 feet (*Salvin*), shady places, Cuesta de Atitlan (*Bernoulli*, 609); COSTA RICA, without special locality (*Endres*, 76). Hb. Kew.

This species is contrasted by the authors (*l. c.*) with "*H. leucocephala*, Ch. et Schl.," a name which may have been given to a Mexican species, of which we have found no publication.

5. **Hydrocotyle prolifera,** Kellogg, Proc. Calif. Acad. i. p. 15; Bot. Calif. i. p. 254.

California.—North Mexico, Sonora Alta (*Coulter*).

6. **Hydrocotyle pusilla,** Rich. Hydroc. p. 27, t. 52. fig. 2?

South Mexico (*Harris*).—The true plant is a native of Ecuador and Brazil. Hb. Kew.

7. **Hydrocotyle ranunculoides,** Linn. fil. Suppl. p. 177; Bot. Calif. i. p. 254.

Hydrocotyle natans, Cyril, Pl. Rar. Neap. i. t. 6. fig. B; DC. Prodr. iv. p. 60.

Southern States of North America and Cuba.—North Mexico, various places in Sonora (*Torrey*); South Mexico (*Christy*), ditches near the city of Mexico (*Bourgeau*, 929); Jalapa to Real del Monte (*Coulter*, 108).—Also in South America and in the south of Europe. Hb. Kew.

8. **Hydrocotyle,** sp.

South Mexico (*Jurgensen*, 810). Hb. Kew.

The same species in hb. Kew, from Colombia.

2. MICROPLEURA.

Micropleura, Lag. Obs. Aparasol. p. 15; Benth. et Hook. Gen. Plant. i. p. 873.

The only known species:—

1. **Micropleura renifolia,** Lag. Obs. Aparas. p. 15; DC. Prodr. iv. p. 71.

Hydrocotyle? grumosa, DC. Prodr. iv. p. 70; Calques des Dess. Fl. Mex. 426.

South Mexico, region of Orizaba, Escamella (*Bourgeau*, 2932; *Müller*, 1097), woods on the mountains of the Pacific coast of Oaxaca, 6000 to 7000 feet (*Galeotti*, 2752); Guatemala, Barranca del Incienso (*Bernoulli*, 289). Hb. Kew.

There seems to be no doubt that the Mexican plant is the same as that described by Lagasca, though he records it as a native of Chiloe. It also agrees exactly with De Candolle's tracing of Moçino and Sessé's figure quoted above, and should, we think, be referred to *Hydrocotyle*.

Tribe MULINEÆ.

There are nine genera of this tribe, chiefly South-American, but also represented in South Africa and Australia. There are none in the northern hemisphere, except the Mexican and one species in the Canary Islands.

3. SPANANTHE.

Spananthe, Jacq. Collect. iii. p. 247; Benth. et Hook. Gen. Plant. i. p. 876.

One (or two) herbaceous species.

1. **Spananthe angulosa,** Turcz. in Bull. Soc. Nat. Mosc. xx. p. 171.

South Mexico, Zacuapan, near Jalapa (*Galeotti*, 2743). Hb. Kew.

Probably a variety of the following.

2. **Spananthe paniculata,** Jacq. Coll. iii. p. 247, et Ic. Rar. iii. t. 350.
SOUTH MEXICO, Orizaba (*Botteri*, 865; *Bourgeau*, 3117; *Müller*), Tolima (*Goudet*), Huatusco (*Heller*, 450), Hacienda de la Laguna (*Schiede & Deppe*); GUATEMALA, near Coban (*Türckheim*), in hedges (*Bernoulli*, 152); COSTA RICA, San José (*Polakowsky*).—TRINIDAD and Tropical SOUTH AMERICA. Hb. Kew.

4. BOWLESIA.

Bowlesia, Ruiz et Pav. Prodr. Fl. Per. p. 44; Benth. et Hook. Gen. Plant. i. p. 876.

About twelve herbaceous species; with the exception of one in the Canary Islands, they are all South-American, chiefly Andean; and only one reaches North America.

1. **Bowlesia lobata,** Ruiz et Pav. Fl. Peruv. t. 251. fig. *b*.
CALIFORNIA, ARIZONA.—MEXICO (ex *Watson & Brewer*, Bot. Calif. i. p. 255).—COLOMBIA to PERU.

5. ASTERISCIUM.

Asteriscium, Ch. et Schl. in Linnæa, i. p. 254; Benth. et Hook. Gen. Plant. i. p. 877.

About seven or eight herbaceous species—with the exception of *A. flexuosum*, natives of extratropical South America, principally of Chili.

1. **Asteriscium flexuosum,** Hemsley, Diag. Pl. Nov. pars 1, p. 16. (Tab. XXXII.)

Ramis teretibus striatis gracilibus foliosis, foliis (caulinis) supremis parvis cuneatis apice 3–5-dentatis subsessilibus, inferioribus latioribus trilobatis longe petiolatis, umbellis paucifloris, petalis valde involutis.

Herba glabra, ramosa. *Rami* graciles, flexuosi, teretes, striati. *Folia* (radicalia non vidi) inferiora longe petiolata, suborbicularia, trilobata, ad 9 poll. lata, basi rotundata, sinibus latis rotundatis, petiolo ad 2 poll., superiora gradatim minora, basi cuneata, apice 3–5-dentata. *Flores* hermaphroditi (?); umbellæ pauciforæ, longe pedunculatæ, pedicellis brevibus; involucri bracteæ parvæ, apice 3-dentatæ; petala valde involuta, staminibus duplo breviora; styli erecti. *Carpella* (matura non visa) subbialata.

SOUTH MEXICO, without locality (*Bates*). Hb. Kew.

A very distinct plant in the Mexican flora, and readily distinguished from its South-American congeners by its leafy flexuose stem and less laterally constricted carpels. We have ventured to describe and figure it, although ripe fruit is wanting, because it is very distinct from all other members of the family hitherto collected in Mexico.

EXPLANATION OF TAB. XXXII.

Portions of plant, natural size.

Fig. 1, a flower; 2, a petal, as seen from the upperside; 3, lateral view of a petal; 4, a young fruit; 5, a cross section of the same.

Tribe SANICULEÆ.

Ten genera are referred to this tribe, the species of which cover nearly the whole range of the family.

6. ERYNGIUM.

Eryngium, Linn. Gen. Plant. n. 324; Benth. et Hook. Gen. Plant. i. p. 878.

About 100 species, generally dispersed in temperate and subtropical regions, except South Africa, and especially abundant in America, from the southern states of the North to Chili. With the exception of two arboreous species in Juan Fernandez, they are herbaceous plants, many of them having hard spiny leaves.

1. **Eryngium aquaticum,** Linn. Sp. Pl. p. 336; Jacq. Ic. Rar. t. 347; Bot. Reg. t. 372.

South-eastern States of NORTH AMERICA to TEXAS.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 285). Hb. Kew.

2. **Eryngium axilliflorum,** Turcz. in Bull. Soc. Nat. Mosc. xx. p. 171.

SOUTH MEXICO, Peak of Orizaba.

This is perhaps the same as *E. cymosum.*

3. **Eryngium beecheyanum,** Hook. et Arn. Bot. Beech. Voy. p. 294.

NORTH MEXICO, Sierra Madre (*Seemann*, 2135); SOUTH MEXICO, valley of Mexico (*Schaffner*, 149), Tepic (*Barclay*), Jalisco (*Beechey*), Vera Cruz (*Müller*), Orizaba (*Botteri*, 864), Jalapa to Real del Monte (*Coulter*, 105). Hb. Kew.

This may be *E. carlinæ.*

4. **Eryngium bonplandii,** Delar. Eryng. Hist. p. 52, t. 22.

SOUTH MEXICO, in shady woods near Santa Rosa and Guanaxuato, 8580 feet (*Humboldt*).

5. **Eryngium bromeliæfolium,** Delar. Eryng. Hist. p. 60, t. 28.

SOUTH MEXICO, damp woods (*Humboldt & Bonpland*), without locality (*De Bergher*).

6. **Eryngium carlinæ,** Delar. Eryng. Hist. p. 53, t. 23.

SOUTH MEXICO, region of Orizaba, and Santa Fé, (*Bourgeau*, 930, 2678), Oaxaca (*Ghiesbreght*), Toluca, at 8800 feet (*Heller*), between La Joya and Las Vegas, near Perote, and on the Peak of Orizaba (*Schiede*); COSTA RICA, in meadows near San José (*Polakowsky*). Hb. Kew.

7. **Eryngium cervantesii,** Delar. Eryng. Hist. p. 47, t. 18. fig. 1.

SOUTH MEXICO, Jalisco (*Beechey*). Hb. Kew.

8. **Eryngium comosum,** Delar. Eryng. Hist. p. 30, t. 7.

SOUTH MEXICO, about the city of Mexico (*Aschenborn*), between Sarco and Toluca (*Humboldt & Bonpland*), Tacubaya (*Schaffner*), valley of Mexico (*Bourgeau*, 313). Hb. Kew.

9. **Eryngium cymosum,** Delar. Eryng. Hist. p. 63, t. 31.

South Mexico, peak of Orizaba, 9700 feet (*Linden*, 495), 8000 to 10,000 feet (*Galeotti*, 2765), Zimapan (*Coulter*, 101), near Tasco, 5500 feet (*Humboldt & Bonpland*). Hb. Kew.

10. **Eryngium deppeanum,** Schl. et Ch. in Linnæa, v. p. 207.

South Mexico, Cerro Colorado (*Schiede & Deppe*).

11. **Eryngium diffusum,** Torr. in Ann. Lyc. N. York, ii. p. 207; Torr. & Gr. Fl. N. Am. i. p. 603.

Texas.—North Mexico, in the valley of the Rio Grande.

12. **Eryngium fœtidum,** Linn. Sp. Pl. p. 336.; Descour. Fl. Ant. viii. t. 585.

Nicaragua, Chontales (*Tate*); Panama, Chagres (*Fendler*, 133), in meadows near the city of Panama (*Seemann*).—West Indies and Tropical S. America; also in West Tropical Africa, but probably introduced. It is generally cultivated in Tropical America for flavouring soups &c. Hb. Kew.

13. **Eryngium ghiesbreghtii,** Delar. (ubi publ. ?).

South Mexico, Oaxaca (*Ghiesbreght*). Hb. Kew.

14. **Eryngium gracile,** Delar. Eryng. Hist. p. 54, t. 24.

"New Spain," in damp places (*Humboldt & Bonpland*).

15. **Eryngium gramineum,** Delar. Eryng. Hist. p. 60, t. 27.

South Mexico, in dry pastures, Anganguio (*Hartweg*), near Santa Rosa, 8640 feet (*Humboldt & Bonpland*). Hb. Kew.

16. **Eryngium heterophyllum,** Engelm. in Bot. Wisliz. Exped. p. 22, in adnot.

North Mexico, common about Cosiquiriachi (*Wislizenus*).

17. **Eryngium leavenworthii,** Torr. & Gray, Fl. N. Amer. p. 604.

Southern States of North America to—North Mexico.

18. **Eryngium longifolium,** Cav. Ic. vi. p. 36, t. 555.

South Mexico, pastures near Pachuca and Real del Monte (ex *Cavanilles*).

19. **Eryngium longirameum,** Turcz. in Bull. Soc. Nat. Mosc. xx. p. 171.

South Mexico, Cordillera of Oaxaca, at 7000 to 8000 feet (*Galeotti*, 2769), Sierra San Pedro Nolasco (*Jurgensen*, 819), Chiapas (*Ghiesbreght*, 136); Guatemala, Camino del Zapote (*Bernoulli*, 306). Hb. Kew.

20. **Eryngium monocephalum,** Cav. Ic. vi. p. 35, t. 553.

South Mexico, near Huanajuato and Chilpancingo (ex *Cavanilles*).

21. **Eryngium nasturtiifolium,** Juss., ex Delar. Eryng. Hist. p. 46, t. 17.

South Mexico, valley of Cordova (*Bourgeau*, 2070). Hb. Kew.

22. **Eryngium pectinatum,** Presl, ex DC. Prodr. iv. p. 96.

North Mexico, Sierra Madre (*Seemann*, 2136); South Mexico, Tepic (*Lay*). Hb. Kew.

23. **Eryngium phyteumatos,** Delar. Eryng. Hist. p. 51, t. 21.
South Mexico, in humid pastures (*Hartweg*, 296). Hb. Kew.

24. **Eryngium proteæflorum,** Delar. Eryng. Hist. p. 62, t. 30.
South Mexico, Volcan de Jorullo, 3480 feet (*Humboldt & Bonpland*), peak of Orizaba, at 12,000 feet (*Galeotti*, 2763), Desierto Viejo, valley of Mexico (*Bourgeau*, 1052), Llanos of Perote (*Schiede*). Hb. Kew.

25. **Eryngium ranunculoides,** Benth. Pl. Hartw. p. 38.
South Mexico, in mountain-pastures, Anganguio (*Hartweg*, 294). Hb. Kew.

26. **Eryngium scaposum,** Turcz. in Bull. Soc. Nat. Mosc. xx. p. 171.
South Mexico, Oaxaca, at 9000 feet (ex *Turczaninow*).

27. **Eryngium schiedeanum,** Schl. et Ch. in Linnæa, v. p. 206.
South Mexico, in grassy places near Jalapa (*Schiede & Deppe*), valley of Mexico (*Bourgeau*, 478). Hb. Kew.
Perhaps the same as *E. serratum*. DeCandolle refers it to *E. Hænkei*; but Schlechtendal states that it is different.

28. **Eryngium serratum,** Cav. Ic. vi. p. 36, t. 554.
North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 284); South Mexico, Rio Sarco, 5880 feet (*Humboldt & Bonpland*), valley of Mexico (*Schaffner*, 158; *Bourgeau*, 478), without exact localities (*Keerl*, *Aschenborn*). Hb. Kew.

29. **Eryngium stellatum,** Mutis; Delar. Eryng. Hist. p. 55, t. 25.
Mexico. "Hb. Dombey."

30. **Eryngium subacaule,** Cav. Ic. vi. p. 37, t. 556. fig. 2.
"New Spain."

31. **Eryngium tenue,** Hook. et Arn. Bot. Beech. Voy. p. 293.
South Mexico, Jalisco (*Beechey*).

32. **Eryngium wrightii,** A. Gray, Pl. Wright. i. p. 78, ii. p. 65.
New Mexico.—North Mexico, region of San Luis Potosi (*Parry & Palmer*, 286), mountains of Sonora (*Wright*). Hb. Kew.

33. **Eryngium,** sp.
South Mexico, Zimapan (*Coulter*, 102). Hb. Kew.

34. **Eryngium,** sp.
South Mexico, Zimapan (*Coulter*, 103). Hb. Kew.

35. **Eryngium,** sp.
South Mexico, Real del Monte (*Coulter*, 106, 1152). Hb. Kew.

36. **Eryngium,** sp. (aff. *E. pectinato*).
South Mexico, Desierto Viejo, near Mexico (*Bourgeau*, 1177). Hb. Kew.

37. **Eryngium,** sp. (*E. microcephalum*, Willd. ?).

SOUTH MEXICO, woods on the Pacific coast of Oaxaca, at 7000 feet (*Galeotti*, 2767). Hb. Kew.

7. SANICULA.

Sanicula, Linn. Gen. Plant. n. 326; Benth. et Hook. Gen. Plant. i. p. 880.

About ten herbaceous species, one of which is widely dispersed in Europe, Asia, and the temperate regions of Africa, another is Azorean, and a third inhabits the Sandwich Islands; all the rest are American, ranging from the north, through the Andes, to Chili.

1. **Sanicula liberta,** Ch. et Schl. in Linnæa, i. p. 253, et v. p. 208.

SOUTH MEXICO, in shady woods on the Cerro Colorado, near Jalapa (*Schiede & Deppe*, 283); COSTA RICA, in wet meadows near Herran (*Polakowsky*). Hb. Paris.

2. **Sanicula mexicana,** DC. Prodr. iv. p. 84.

SOUTH MEXICO, Jalapa (*Galeotti*, 2746; *Linden*, 58), valley of Cordova (*Bourgeau*, 2293), Orizaba (*Botteri*, 872), Real del Monte (*Berlandier*, 403); GUATEMALA, Volcan de Fuego, ridge above Calderas, 8300 feet (*Salvin*).—Southward to CHILI. Hb. Kew.

Tribe AMMINEÆ.

Nearly half the genera and species of the family belong here; they are generally diffused.

8. TAUSCHIA.

Tauschia, Schl. in Linnæa, ix. p. 607; Benth. et Hook. Gen. Plant. i. p. 882.

Two or more herbaceous species, all occurring in Mexico.

1. **Tauschia coulteri,** A. Gray, Pl. Lindh. ii. p. 211, in adnot.

SOUTH MEXICO, Real del Monte (*Coulter*, 121), Cordillera of Oaxaca, woods at 7000 to 9000 feet (*Galeotti*, 2760). Hb. Kew.

2. **Tauschia nudicaulis,** Schl. in Linnæa, ix. p. 608.

SOUTH MEXICO, between La Joya and San Salvador (*Galeotti*), peak of Toluca, 10,500 feet (*Galeotti*, 2733), Jalapa (*Coulter*, 120).—Also in ECUADOR (*Spruce*, 6065). Hb. Kew.

3. **Tauschia,** sp.

SOUTH MEXICO, near Oaxaca (*Ghiesbreght*). Hb. Kew.

9. ARRACACIA.

Arracacia, Bancr. in Trans. Agr.-Hort. Soc. Jam., ex Linnæa, iv. Litteraturb. p. 13; Benth. et Hook. Gen. Plant. i. p. 884.

As limited by Bentham and Hooker, a dozen or more herbaceous species, extending from California and Mexico to the Andes of South America.

1. **Arracacia acuminata,** Benth. Pl. Hartw. p. 187.

South Mexico, region of Orizaba (*Bourgeau*, 2837); Guatemala, Volcan de Fuego, ridge above Calderas, 8300 feet (*Salvin*).—Colombia to Peru. Hb. Kew.

2. **Arracacia atropurpurea,** Benth. et Hook. Gen. Pl. i. p. 885.

Pentacrypta atropurpurea, Lehm. in Linnæa, v. p. 380, t. 5. fig. 2.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 290); South Mexico, Toluca (*Andrieux*, 353), Orizaba, Alpatlahua, on the eastern declivity, at 6500 feet (*Heller*), Desierto Viejo, valley of Mexico (*Bourgeau*, 780), Pueblo de los Angeles (*Aschenborn*), without localities (*Parkinson*, *Bates*). Hb. Kew.

3. **Arracacia decumbens,** Benth. et Hook. Gen. Pl. i. p. 885.

Velæa decumbens, Benth. Pl. Hartw. p. 38.

South Mexico, Zimapan (*Coulter*, 114), woods at 7000 to 8000 feet in the Cordillera of Oaxaca (*Galeotti*, 2750), Morelia (*Hartweg*), plain of Topetougo and at Tlalpuxahua (*Graham*). Hb. Kew.

4. **Arracacia glaucescens,** Benth. Pl. Hartw. p. 187 ?

South Mexico, about Toluca (*Andrieux*, 351).—The typical plant was collected in Colombia. Hb. Kew.

5. **Arracacia tolucensis,** Hemsley.

Ligusticum toluccense, H. B. K. Nov. Gen. et Sp. v. p. 19, t. 422.
Velæa toluccensis, DC. Prodr. iv. p. 231.

South Mexico, between Toluca and Islahuaca, at 8280 feet (*Humboldt & Bonpland*).

6. **Arracacia,** sp.

North Mexico, Sierra Madre (*Seemann*, 2134). Hb. Kew.

Referred by Seemann (Bot. Voy. 'Herald') to *Velæa toluccensis*, DC., from which it differs.

7. **Arracacia,** sp.

South Mexico, peak of Orizaba, at 9500 feet (*Linden*, 560, 2737). Hb. Kew.

8. **Arracacia,** sp.

South Mexico, peak of Orizaba, at 9500 feet (*Linden*, 563). Hb. Kew.

9. **Arracacia,** sp.

On Mount San Felipe, near Oaxaca (*Andrieux*, 352). Hb. Kew.

10. **Arracacia,** sp.

South Mexico, pine-forests of Pueblo Nuevo, Chiapas (*Linden*, 586), Orizaba (*Botteri*, 869). Hb. Kew.

11. **Arracacia,** sp.

South Mexico (*Jurgensen*, 256). Hb. Kew.

12. **Arracacia,** sp.

GUATEMALA, top of Volcan de Agua (*Salvin & Godman*). Hb. Kew.

10. EULOPHUS.

Eulophus, Nutt., ex DC. Prodr. iv. p. 248; Benth. et Hook. Gen. Plant. i. p. 885.

Four herbaceous species—one in Arkansas, one in Texas, and the following:—

1. **Eulophus peucedanoides,** Benth. et Hook. Gen. Pl. i. p. 885.

Smyrnium ? lineare, Benth. Pl. Hartw. p. 83.
Cnidium peucedanoides, H. B. K. Nov. Gen. et Sp. v. p. 15.
Silaus ? peucedanoides, DC. Prodr. iv. p. 161.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 292, 293); SOUTH MEXICO, region of Orizaba (*Botteri*, 871; *Bourgeau*, 2676), Mirador (*Linden*, 1277), savannas at 3000 feet in the Cordillera of Vera Cruz (*Galeotti*, 2741); GUATEMALA, in fields, Tejar and Chimaltenango (*Hartweg*, 578), Camino del Zapote (*Bernoulli*, 299). Hb. Kew.

2. **Eulophus,** sp. ?

NORTH MEXICO, Zacatecas (*Coulter*, 115). Hb. Kew.

11. SMYRNIUM.

Smyrnium, Linn. Gen. Plant. n. 363.

Bentham and Hooker (Gen. Plant. i. p. 885) limit this genus to the Old-World species, but do not mention the following plant. It may be a species of *Eulophus*.

1. **Smyrnium ægopodioides,** H. B. K. Nov. Gen. et Sp. v. p. 16.

SOUTH MEXICO, near Moran, at 8050 feet (*Humboldt & Bonpland*).

Berlandier's number 1042, from the Cordillera of Guchilope, bears this name in hb. Paris.

12. APIUM.

Apium, Linn. Gen. Plant. n. 367; Benth. et Hook. Gen. Plant. i. p. 888.

About fourteen herbaceous species, dispersed nearly all over the world.

1. **Apium echinatum,** Benth. et Hook. Gen. Plant. i. p. 888.

Leptocaulis echinatus, Nutt.; DC. Prodr. iv. p. 107, et Mém. Omb. t. 10.

Southern States of NORTH AMERICA to—NORTH MEXICO, mountains near Lake Santa Maria, Chihuahua (*Bigelow*), Sonora (*Parry*), Lower Rio Grande (*Schott*). Hb. Kew.

[2. **Apium graveolens,** Linn. Sp. Pl. p. 379.

The Celery has a very wide area of distribution in the northern hemisphere in the Old World, and it is also naturalized in many countries, as in SOUTH MEXICO, Tehuacan, Cordillera of Oaxaca, 5000 feet (*Galeotti*, 2756).]

3. **Apium leptophyllum,** F. Müll. in Benth. Fl. Australiensis, iii. p. 372.
Helosciadium leptophyllum, DC. Prodr. iv. p. 105; Rchb. Fl. Germ. t. 1860.

Southern States of NORTH AMERICA.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 294); SOUTH MEXICO, Ciudad Real (*Linden*, 588), Orizaba (*Galeotti*, 2739, 2755; *Botteri*, 866; *Müller*, 1858), valley of Cordova (*Bourgeau*, 317 and 2183), valley of Mexico (*Schaffner*, 169); GUATEMALA, Llanos (*Bernoulli*, 261).—Common in SOUTH AMERICA; also in Tropical AFRICA and in Eastern AUSTRALIA. Hb. Kew.

4. **Apium ?,** sp.

SOUTH MEXICO, Chiapas (*Ghiesbreght*, 687). Hb. Kew.

13. SIUM.

Sium, Linn. Gen. Plant. n. 348; Benth. et Hook. Gen. Plant. i. p. 893.

Four species, widely spread in the northern hemisphere, and one of them also growing in South Africa.

1. **Sium angustifolium,** Linn. Sp. Pl. p. 1672; DC. Prodr. iv. p. 125.
Berula angustifolia, Koch.

Widely spread in the United States of NORTH AMERICA to—NORTH MEXICO, Sonora (*Schott*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 289); SOUTH MEXICO, region of Orizaba (*Bourgeau*, 2527), Cordillera of Oaxaca, at 7500 feet (*Galeotti*, 2757).—Also common in EUROPE and Western ASIA to INDIA. Hb. Kew.

14. CICUTA.

Cicuta, Linn. Gen. Plant. n. 354; Benth. et Hook. Gen. Plant. i. p. 889.

About six herbaceous species, widely dispersed in the northern hemisphere.

1. **Cicuta maculata,** Linn. Sp. Pl. p. 367; Bigel. Med. Bot. t. 12.

From SASKATCHEWAN and NEW ENGLAND southward.—SOUTH MEXICO, near Vera Cruz, 1000 feet (*Galeotti*, 2747; *Linden*, 566), near Jalapa (*Schiede & Deppe*). Hb. Kew.

15. CARUM.

Carum, Linn. Gen. Plant. n. 365; Benth. et Hook. Gen. Plant. i. p. 890.

A large genus, generally dispersed in temperate and subtropical regions of the northern hemisphere and South Africa.

1. **Carum,** sp. ?

SOUTH MEXICO, around Oaxaca (*Andrieux*, 355). Hb. Kew.

16. OSMORRHIZA.

Osmorrhiza, Rafin., ex DC. Prodr. iv. p. 232; Benth. et Hook. Gen. Plant. i. p. 897.

Four herbaceous species, ranging from the Andes of South America, through North America, to China, Japan, and the mountains of India.

1. **Osmorrhiza brevistylis,** DC. Prodr. iv. p. 232; Hook. Fl. Bor.-Am. t. 97.

In NORTH AMERICA from the Arctic Circle southward.—SOUTH MEXICO, forest of the Desierto Viejo (*Bourgeau*, 781), valley of Mexico (*Schaffner*, 164), Cordillera of Oaxaca, at 9000 feet (*Galeotti*, 2751).—Also in the mountains of NORTH INDIA, and in CHINA and JAPAN. Hb. Kew.

Mr. C. B. Clarke (Hooker's Fl. Brit. Ind. ii. p. 690) unites this with *O. longistylis*, DC., under the name of *O. claytoni*.

17. OREOMYRRHIS.

Oreomyrrhis, Endl. Gen. Plant. p. 787; Benth. et Hook. Gen. Plant. i. p. 897.

Besides the two doubtful species described below, there are four or five well-known species, one of which ranges through the Andes of South America and the mountains of Australia and New Zealand; the others are exclusively confined to New Zealand.

1. **Oreomyrrhis andina,** Endl. Gen. Pl. p. 787 ?

Myrrhis andina, H. B. K. Nov. Gen. et Sp. v. t. 419?

SOUTH MEXICO, peak of Orizaba, near the snow-line (*Linden*, 1276). Hb. Kew.

This is probably *O. andina*, the species having the wide range indicated above.

2. **Oreomyrrhis? gracilipes,** Hemsley, Diag. Pl. Nov. pars 1, p. 16. (Tabb. XXXIII. et XXXIV. figg. ♂ 6–8.)

Scaposa, glabra, foliis petiolatis bipinnatipartitis (vel fere pinnatis), petiolo omnino vaginante, umbellis simplicibus, pedicellis filiformibus, floribus polygamo-monoicis (vel dioicis?), petalis acutis apice inflexis.

Herba (annua, *Galeotti*) scaposa, glabra. *Folia* petiolata, pinnatim dissecta vel subpinnata, ad 3-pollicaria; segmenta alte pinnatifida, basi angustissima, vix articulata, 6–12 lin. longa, lobis denticulatis, acutis; petiolus omnino vaginans. *Scapus* gracilis, nudus, vix striatus, usque 20-pollicaris; umbellæ simplices, multifloræ, pedicellis gracillimis, ad pollicaribus; involucri bracteæ lineari-subulatæ, 2 lin. longæ. *Flores* (lutei, *Galeotti*) polygamo-monoici (vel dioici?), calycis dentes conspicui, acuti; petala acuta, apice leviter inflexa; ovarium evittatum?, mericarpiis subteretibus. *Fructus* maturus a nobis non visus.

SOUTH MEXICO, slopes of the Pacific side of the Cordillera of Oaxaca (*Galeotti*, 2753), without locality (*Sallé*). Hb. Kew.

EXPLANATION OF TAB. XXXIII.

A plant, or portion of a plant, natural size.

Fig. 1, a flower; 2, the same, with the petals and stamens removed; 3, cross section of very young fruit: all enlarged.

EXPLANATION OF TAB. XXXIV. FIGG. ♂ 6–8.

Two umbels of male flowers, natural size.

Fig. 6, a male bud; 7, a partially opened male flower; 8, a fully opened fertile (?) flower: all enlarged.

3. **Oreomyrrhis? planipetala,** Hemsley, Diag. Pl. Nov. pars 1, p. 16. (Tab. XXXIV. pro parte.)

Scaposa, glabra, foliis angustis pinnatipartitis, segmentis palmatipartitis basi angustissimis, lobis acutis, petiolo ad medium tantum vaginante, umbellis simplicibus, floribus simulate hermaphroditis vel monoicis, calycis dentibus prominulis, petalis obovatis integris planis.

Herba scaposa, glabra. *Folia* petiolata, angusta, pinnatim dissecta vel subpinnata, 6–8-pollicaria; segmenta palmatifida, basi angustissima, vix articulata, 3–4 lin. longa lataque, lobis acutis; petiolus ad medium tantum vaginans, parte libera 2–3 poll. longa. *Scapus* gracilis, nudus, striatus, 15-pollicaris (in specimine Hartwegiano); umbellæ simplices, multifloræ, pedicellis gracilibus ad semipollicaribus; involucri bracteæ lineari-lanceolatæ, subobtusæ, $2\frac{1}{2}$–$3\frac{1}{2}$ lin. longæ. *Flores* simulate hermaphroditi vel monoici; calycis dentes conspicui; petala plana, obovata, obtusa; ovarium evittatum?, mericarpiis subangulatis. *Fructus* maturus nobis ignotus.

SOUTH MEXICO, Bolaños (*Hartweg*, 6). Hb. Kew.

EXPLANATION OF TAB. XXXIV. FIGG. ♀ 1–5.

A plant, or portion of a plant, natural size.

Fig. 1, partially expanded flower; 2, fully expanded flower; 3, a petal; 4, a very young fruit; 5, a cross section of the same: all magnified.

This and *O.? gracilipes* probably belong to a distinct genus; but, in the absence of ripe fruit, it has been thought better to leave them in the genus to which they are doubtfully referred in Bentham and Hooker's 'Genera Plantarum.' Drawings of them have been made because they are remarkably distinct from any thing else hitherto collected in Mexico.

18. OTTOA.

Ottoa, H. B. K. Nov. Gen. et Sp. v. p. 20; Benth. et Hook. Gen. Plant. i. p. 899.

The only species, an herbaceous plant:—

1. **Ottoa œnanthoides,** H. B. K. Nov. Gen. et Sp. v. p. 20, t. 423.

SOUTH MEXICO, peak of Orizaba, 11,000 feet (*Linden*, 559), Cerro de Ruminavi (*Hartweg*), Tacubaya, valley of Mexico (*Bourgeau*, 643); GUATEMALA, Volcan de Fuego, 13,000 feet (*Salvin*).—Southward to PERU. Hb. Kew.

Tribe SESELINEÆ.

A large and generally dispersed tribe.

19. CRANTZIA.

Crantzia, Nutt. Gen. Plant. N. Amer. i. p. 177; Benth. et Hook. Gen. Plant. i. p. 906.

The only species, an herbaceous plant:—

1. **Crantzia lineata,** Nutt. Gen. Am. i. p. 178; DC. Prodr. iv. p. 71.

Crantzia schaffneri, Schl. in Linnæa, xxvi. p. 370.

Extratropical NORTH and SOUTH AMERICA, and mountains within the Tropics.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 287); SOUTH MEXICO, here and there near Chapultepec (*Schaffner*).—Also widely dispersed in AUSTRALIA and NEW ZEALAND. Hb. Kew.

20. ŒNANTHE.

Œnanthe, Linn. Gen. Plant. n. 352; Benth. et Hook. Gen. Plant. i. p. 905.

A genus of about twenty herbaceous species, widely diffused in the northern hemisphere, and represented in South Africa and Tropical Australia.

1. **Œnanthe?,** sp.

SOUTH MEXICO, Cerro de Guadalupe, near Zacoalco (*Bourgeau*, 570). Hb. Kew.

21. CYMOPTERUS.

Cymopterus, Raf., ex DC. Prodr. iv. p. 203; Benth. et Hook. Gen. Plant. i. p. 911.

A North-American genus of about fifteen species, one of which enters the northern boundary of Mexico.

1. **Cymopterus fendleri,** A. Gray, Pl. Fendl. p. 57.

TEXAS.—NORTH MEXICO, Chihuahua (*Bigelow*).

22. LIGUSTICUM.

Ligusticum, Linn. Gen. Plant. n. 346; Benth. et Hook. Gen. Plant. i. p. 911.

About twenty herbaceous species, dispersed in the northern hemisphere.

1. **Ligusticum dubium,** H. B. K. Nov. Gen. et Sp. v. p. 19.

SOUTH MEXICO, between Real del Monte and Cerro Ventoso, 8580 feet (*Humboldt & Bonpland*).

23. ANGELICA.

Angelica, Linn. Gen. Plant. n. 347; Benth. et Hook. Gen. Plant. i. p. 916.

Herbs. About twenty species, in the north temperate and subarctic regions and in New Zealand.

1. **Angelica mexicana,** Vatke, App. Ind. Sem. Hort. Berol. 1876, n. 12.

SOUTH MEXICO, around the city of Mexico (*Hahn*, 13), Mineral del Monte (*Ehrenberg*, 186).

2. **Angelica,** sp.

SOUTH MEXICO, Orizaba (*Botteri*, 870). Hb. Kew.

3. **Angelica,** sp.

South Mexico, region of Orizaba (*Bourgeau*, 2677). Hb. Kew.

4. **Angelica,** sp.

South Mexico, forest of the Desierto Viejo, valley of Mexico (*Bourgeau*, 1053). Hb. Kew.

Tribe PEUCEDANEÆ.

A small tribe as to genera; but some of the genera comprise a large number of species. Distribution general.

24. PEUCEDANUM.

Peucedanum, Linn. Gen. Plant. n. 339; Benth. et Hook. Gen. Plant. i. p. 918.

About 100 species, generally diffused in the northern hemisphere, excepting the colder parts, in the Andes of South America, and in Tropical and South Africa. Some of the African species are shrubby; and others form small trees; the rest are herbaceous.

1. **Peucedanum nevadense,** Watson in Proc. Am. Acad. xi. p. 143; Bot. Calif. i. p. 267.

New Mexico; California.—North Mexico, Sonora (ex *Brewer & Watson*, Bot. Calif.).

2. **Peucedanum tolucense,** Hemsley.

Ferula tolucensis, H. B. K. Nov. Gen. et Sp. v. p. 12, t. 418.

South Mexico, near Toluca, 8250 feet (*Humboldt & Bonpland*), on the Campanaria, near Anganguio, 9500 feet (*Hartweg*, 298), peak of Orizaba, 12,500 feet (*Galeotti*, 2736; *Linden*, 561). Hb. Kew.

3. **Peucedanum,** sp.

South Mexico, Zacoalco, valley of Mexico (*Bourgeau*, 571). Hb. Kew.

4. **Peucedanum,** sp.

South Mexico, Zimapan (*Coulter*, 111). Hb. Kew.

5. **Peucedanum ?,** sp.

South Mexico, Sante Fé, valley of Mexico (*Bourgeau*, 315). Hb. Kew.

6. **Peucedanum ?,** sp.

South Mexico, Oaxaca (*Andrieux*, 355). Hb. Kew.

7. **Peucedanum ?,** sp.

South Mexico, valley of Mexico (*Bourgeau*, 316). Hb. Kew.

Tribe CAUCALINEÆ.

About a dozen genera, with the exception of *Caucalis* and *Daucus* monotypic, or including only two or three species each. Most of them have winged or bristly fruits; and they are mostly of annual or biennial duration. Distribution general.

[**Coriandrum sativum,** Linn. Sp. Pl. p. 367. The Coriander is a native of the Mediterranean region, but is now naturalized in most countries, including Nicaragua and Mexico.]

25. DAUCUS.

Daucus, Linn. Gen. Plant. n. 333; Benth. et Hook. Gen. Plant. i. p. 928.

Upwards of fifty species have been described; but the distinctions are not very obvious. Generally dispersed in north-temperate regions; and the American species reaching the southern hemisphere.

1. **Daucus brachiatus,** Sieb. in DC. Prodr. iv. p. 214.

Caucalis microcarpa, Hook. et Arn. Bot. Beech. Voy. p. 348.

California, Mexico, &c., in America, also common in New Zealand and Australia.

[2. **Daucus carota,** Linn. Sp. Pl. p. 348. The carrot is naturalized in some parts of Mexico.]

3. **Daucus montanus,** Willd. in Schultz's Syst. vi. p. 482; Ref. Bot. t. 299.

Daucus toriloides, DC. Prodr. iv. p. 214.

Texas.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 291); South Mexico, common near Belen (*Schaffner*), Real del Monte (*Coulter*, 110), Orizaba (*Botteri*, 868).—And in Western South America from Colombia to Chili and Juan Fernandez. Hb. Kew.

4. **Daucus pusillus,** Michx. Fl. Bor.-Am. i. p. 164.

Daucus scaber, Nutt.

Nootka Sound southward to—Mexico, Chihuahua (*Wright*).—Also in Patagonia and the Sandwich Islands. Hb. Kew.

Order LXVIII. ARALIACEÆ.

Araliaceæ, Benth. et Hook. Gen. Plant. i. p. 931.

About forty genera, comprising 350 species, with few exceptions shrubby or arboreous, and for the greater part natives of tropical and subtropical countries, where they ascend in the mountains to temperate regions.

1. ARALIA.

Aralia, Linn. Gen. Plant. n. 386; Benth. et Hook. Gen. Plant. i. p. 936.

Perennial herbs or shrubs. About thirty species, whereof six are North American, one or two Mexican, and the rest Eastern and Tropical Asiatic.

1. **Aralia brevifolia,** March. in Bull. Acad. Brux. xlvii. p. 7.

South Mexico, San Andres (*Liebmann*).

2. **Aralia humilis,** Cav. Ic. iv. p. 7, t. 313.

NEW MEXICO.—NORTH MEXICO, mountain ravines, in crevices of rocks, Sonora (*Wright*).

3. **Aralia pubescens,** DC. Hort. Monsp. 1813, p. 80; Prodr. iv. p. 258.

MEXICO.

4. **Aralia regeliana,** March. in Bull. Acad. Brux. xlvii. p. 6.

MEXICO (*Karwinski*).

2. GILIBERTIA.

Gilibertia, Ruiz et Pav. Prodr. Fl. Per. p. 50, t. 8; Fl. Per. t. 312; Benth. et Hook. Gen. Plant. i. p. 944.

Three or four species inhabiting Tropical America.

1. **Gilibertia populifolia,** March. in Bull. Acad. Brux. xlvii. p. 10.

SOUTH MEXICO, Tepitonga (*Liebmann*).

3. DIDYMOPANAX.

Didymopanax, Dcne. et Planch. in Rev. Hort. 1854, p. 105; Benth. et Hook. Gen. Plant. i. p. 939.

About ten shrubby and arboreous species, restricted to North America.

1. **Didymopanax speciosum,** Dcne. et Planch. in Rev. Hort. 1854, p. 109.

Panax speciosum, Willd. Sp. Pl. p. 1126; DC. Prodr. iv. p. 254.
Panax morototoni, Aubl. Guian. ii. p. 949, t. 360 (*undulata* in ic.)

PANAMA, near the city of Panama (*S. Hayes*).—COLOMBIA, GUIANA, and CUBA. Hb. Kew.

4. DENDROPANAX.

Dendropanax, Dcne. et Planch. in Rev. Hort. 1854, p. 107; Benth. et Hook. Gen. Plant. i. p. 943.

Trees or shrubs, about twenty species, inhabiting Tropical America and Asia, and China and Japan.

1. **Dendropanax alaris,** Planch. et Dcne. in Rev. Hort. 1854, p. 107.

Hedera alaris, Schl. in Linnæa, ix. p. 605.

SOUTH MEXICO, Hacienda de la Laguna (*Schiede*).

2. **Dendropanax arboreum,** Planch. et Dcne. in Rev. Hort. 1854, p. 107.

Hedera arborea, Sw. Fl. Ind. Occ. p. 518; DC. Prodr. iv. p. 262.

SOUTH MEXICO, Antigua, Vera Cruz (*Hahn*), valley of Cordova (*Bourgeau,* 2300), Orizaba (*Botteri,* 1063), without habitat (*Jurgensen,* 63); PANAMA, Empire railway-station (*S. Hayes,* 263), Chagres (*Fendler,* 131).—This has a wide range in the WEST INDIES and Tropical S. AMERICA. Hb. Kew.

3. **Dendropanax citrifolium,** Planch. et Dcne. in Rev. Hort. 1854, p. 107.

SOUTH MEXICO, Oaxaca (*Galeotti,* 2790). Hb. Kew.

4. **Dendropanax jurgenseni,** Seem. Rev. Heder. p. 27.
SOUTH MEXICO (*Jurgensen*, 729). Hb. Kew.

5. **Dendropanax langeana,** March. in Bull. Acad. Brux. xlvii. p. 12.
SOUTH MEXICO, Oaxaca (*Liebmann*).

5. OREOPANAX.

Oreopanax, Dcne. et Planch. in Rev. Hort. 1854, p. 107; Benth. et Hook. Gen. Plant. i. p. 946.

A genus of upwards of sixty species of trees and shrubs, restricted to America from Mexico and the West Indies to the Andes of Colombia and Peru.

1. **Oreopanax capitatum,** Dcne. et Pl. in Rev. Hort. 1854, p. 108.
Aralia capitata, Jacq. Amer. p. 89, t. 61.
Hedera capitata, Smith, Ic. Rar. i. t. 4; DC. Prodr. iv. p. 262.
SOUTH MEXICO, in woods near Jalapa (*Schiede*); HONDURAS, Belize (*Marsh*).—WEST INDIES and northern parts of SOUTH AMERICA. Hb. Kew.

2. **Oreopanax costaricense,** March. in Bull. Acad. Brux. xlvii. p. 22.
COSTA RICA, Irazu, 9000 feet (*Ærsted*).

3. **Oreopanax destructor,** Seem. Journ. Bot. vii. p. 351.
NICARAGUA, Chontales (*Seemann*).

4. **Oreopanax ? echinops,** Planch. et Dcne. in Rev. Hort. 1854, p. 108.
Aralia echinops, Schl. et Ch. in Linnæa, v. p. 409; DC. Prodr. iv. p. 670.
SOUTH MEXICO, near Hacienda de la Laguna (*Schiede*).

5. **Oreopanax flaccidum,** March. in Bull. Acad. Brux. xlvii. p. 17.
SOUTH MEXICO, Huitamalco (*Liebmann*).

6. **Oreopanax geminatum,** March. in Bull. Acad. Brux. xlvii. p. 24.
NICARAGUA, Segovia (*Ærsted*).

7. **Oreopanax guatemalense,** Dcne. et Planch. in Rev. Hort. 1854, p. 108.
Sciadophyllum guatemalense, Lem. Fl. des Serres, iii. p. 262, Misc. 44.
GUATEMALA.

8. **Oreopanax jatrophæfolium,** Dcne. et Planch. in Rev. Hort. 1854, p. 108.
Aralia jatrophæfolia, H. B. K. Nov. Gen. et Sp. v. p. 6.
SOUTH MEXICO, Oaxaca (*Ghiesbreght*). Hb. Paris.

9. **Oreopanax liebmannii,** March. in Bull. Acad. Brux. xlvii. p. 20.
SOUTH MEXICO, Alpatlahua (*Liebmann*), Perote (*Hahn*).

10. **Oreopanax ærstedianum,** March. in Bull. Acad. Brux. xlvii. p. 16.
COSTA RICA, Irazu and Cartago, 8000 to 9000 feet (*Ærsted*).

11. **Oreopanax platyphyllum,** March. in Bull. Acad. Brux. xlvii. p. 21.
SOUTH MEXICO, Jocatepec (*Liebmann*).

12. **Oreopanax ruizii,** Planch. et Dcne. in Rev. Hort. 1854, p. 108.

South Mexico, Oaxaca (*Ghiesbreght*).

13. **Oreopanax salvinii,** Hemsley, Diag. Pl. Nov. pars 1, p. 16. (Tab. XXXV.)

Foliis amplis coriaceis glaberrimis longissime petiolatis ad medium 7-lobatis, lobo centrali trifido, lobis lateralibus hinc inde unilateraliter lobulatis dentatisve, floribus capitatis, capitulis racemoso-paniculatis, paniculis amplis terminalibus furfuraceis, ovario biloculari, stylis recurvis.

Arbor ornata (*Salvin*). *Rami* crassi, juniores furfuracei. *Folia* longissime petiolata, coriacea, glaberrima, minute reticulata, semiorbicularia, 18 poll. (vel ultra) diametro, ad medium 7-lobata, lobo centrali 3–5-fido, lobis lateralibus hinc inde unilateraliter lobulatis dentatisve; petiolus teres, sulcato-striatus, 1–2-pedalis (fortasse ultra in foliis maximis), basi incrassatus, primum furfuraceus. *Flores* parvi, capitati; capitula pedunculata, racemoso-paniculata, paniculis amplis, terminalibus, furfuraceis; calyx 5-dentatus, dentibus parvis, obtusis; ovarium biloculare, stylis recurvis. *Fructus* maturus non visus.

Guatemala, Volcan de Fuego, at 7000 feet (*Salvin*).

In foliage this species approaches *O. coriaceum* and several others; but it differs from any other species of the genus (as defined in Bentham and Hooker's 'Genera Plantarum') in having only 2 cells in the ovary. However, as the species included vary in this respect in having from 3 to 7 cells in the ovary, it seems that our plant is admissible.

EXPLANATION OF TAB. XXXV.

Leaf and inflorescence: natural size.

Fig. 1, immature fruit, with bracteoles at the base; 2, vertical section of the same; 3, cross section of the same, showing the two cells: enlarged.

14. **Oreopanax thibautii,** Hook. fil. Bot. Mag. t. 6340.

South Mexico, pine-forests of Titotolé, Chiapas (*Linden*, 1651; *Ghiesbreght*, 147). Hb. Kew.

15. **Oreopanax xalapense,** Planch. et Dcne. in Rev. Hort. 1854, p. 108.

Hedera xalapensis, DC. Prodr. iv. p. 264.

Aralia xalapensis, H. B. K. Nov. Gen. et Sp. v. p. 8.

South Mexico, Jalapa, in woods (*Humboldt & Bonpland*, *Schiede*), Orizaba (*Botteri*, 1011; *Bourgeau*, 2652); Panama, Boquete (*Seemann*). Hb. Kew.

16. **Oreopanax,** sp. (aff. *O. xalapensi*).

Guatemala, Volcan de Fuego, 6000 feet (*Salvin*). Hb. Kew.

17. **Oreopanax,** sp.

South Mexico, Orizaba (*Bourgeau*, 3019; *Sallé*). Hb. Kew.

18. **Oreopanax,** sp.

South Mexico, valley of Cordova (*Bourgeau*, 2066, 2233), region of Orizaba (*Bourgeau*, 3019). Hb. Kew.

19. **Oreopanax,** sp.

South Mexico, forests of Perote (*Hahn*). Hb. Kew.

20. **Oreopanax?,** sp.

Guatemala, Barranca Honda, Volcan de Fuego, 3800 feet (*Salvin*, 1). Hb. Kew.

21. **Oreopanax?,** sp.

Guatemala, Barranca Honda, Volcan de Fuego (*Salvin*, 3). Hb. Kew.

Some of these unnamed specimens probably belong to described species referred to other genera.

6. SCIADODENDRON.

Sciadodendron, Griseb. Bonpl. 1858, p. 7; Benth. et Hook. Gen. Plant. i. p. 935, inter dub.

An obscure genus, limited at present to the following one or two species:—

1. **Sciadodendron excelsum,** Griseb. in Bonplandia, 1858, p. 7.

Panama (*Duchassaing*).

2. **Sciadodendron,** sp.

Panama, without exact localities (*S. Hayes; Seemann*).—Colombia. Hb. Kew.

Order LXIX. CORNACEÆ.

Cornaceæ, Benth. et Hook. Gen. Plant. i. p. 947.

Trees or shrubs, or very rarely herbaceous (*Cornus*). About seventy-five species, belonging to twelve genera. Distribution general, except in frigid regions; the species most numerous in the north temperate countries.

1. CORNUS.

Cornus, Linn. Gen. Plant. n. 149; Benth. et Hook. Gen. Plant. i. p. 950.

Trees, shrubs, or very rarely herbs. About twenty-five species, natives of north temperate regions, including the mountains of Mexico; one is Peruvian.

1. **Cornus disciflora,** DC. Prodr. iv. p. 293; Calques des Dess. Fl. Mex. 442.

Cornus grandis, Ch. et Schl. in Linnæa, v. p. 171.

North Mexico, Sierra Madre (*Seemann*, 2065); South Mexico, San Nicolas, valley of Mexico (*Bourgeau*, 998), Oaxaca, 7000 feet (*Galeotti*, 2716), Cumbre between Oaxaca and la Sierra (*Hartweg*, 466), without locality (*Hahn*, *Bates*). Hb. Kew.

2. **Cornus excelsa,** H. B. K. Nov. Gen. et Sp. iii. p. 430.

South Mexico, Misteca Alta, Cordillera of Oaxaca, 7500 feet (*Galeotti*, 718), in the mountains near Toluca (*Andrieux*, 350), Pedregal (*Bourgeau*, 55), Chiapas (*Ghiesbreght*, 808). Hb. Kew.

3. **Cornus florida,** Linn. Sp. Pl. p. 1661; DC. Prodr. iv. p. 273; Bot. Mag. p. 526.
CANADA to FLORIDA, LOUISIANA.—SOUTH MEXICO, Orizaba (*Botteri*, 1012), Dos Puentes, near Mirador, 3000 feet (*Heller*), Totutla, Vera Cruz (*Linden*, 352), woods at 4000 feet in the Cordillera of Vera Cruz (*Galeotti*, 2715). Hb. Kew.

4. **Cornus stricta,** Lam. Dict. ii. p. 116; DC. Prodr. iv. p. 272 (*striata*).
South-eastern States of NORTH AMERICA and—MEXICO, Santa Fé (*Hahn*). Hb. Paris.

5. **Cornus tolucensis,** H. B. K. Nov. Gen. et Sp. iii. p. 336.
SOUTH MEXICO, near Jalapa (*Humboldt & Bonpland, Linden*, 351), at 4000 feet (*Galeotti*, 2717), Orizaba (*Botteri*, 55, 906, 907; *Müller*, 1340). Hb. Kew.

2. GARRYA.

Garrya, Dougl. ex Lindl. Bot. Reg. t. 1686; Benth. et Hook. Gen. Plant. i. p. 951.

About ten shrubby species, inhabiting California, Mexico, Cuba, and Jamaica.

1. **Garrya laurifolia,** Hartw. Benth. Pl. Hartw. p. 14.
NORTH MEXICO, San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 295), Zacatecas (*Hartweg*, 81); SOUTH MEXICO, Zimapan (*Hartweg*, 384; *Coulter*, 1403), in marshy places in the Cordillera of Oaxaca, at 7000 feet (*Galeotti*, 7002). Hb. Kew.

2. **Garrya oblonga,** Benth. Pl. Hartw. p. 51.
SOUTH MEXICO, Barranca del Encarnacion, near Zimapan (*Hartweg*, 385). Hb. Kew.

3. **Garrya ovata,** Benth. Pl. Hartw. p. 14.
NORTH MEXICO, Zacatecas (*Hartweg*, 80). Hb. Kew.

4. **Garrya macrophylla,** Hartw. in Benth. Pl. Hartw. p. 50.
SOUTH MEXICO, Ciudad Real, Chiapas (*Linden*, 1643), near Real del Monte (*Galeotti*, 71; *Coulter*, 1402), Cerro de Tenango, near Orizaba (*Botteri*, 1). Hb. Kew.

5. **Garrya,** sp.
SOUTH MEXICO, Santa Fé, valley of Mexico (*Bourgeau*). Hb. Kew.

49 1 883 (5)